COBO group

User Manual

I. View Excavator

English

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3B6®

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Rev. Index	Rev. Date	Sw Compatibility	Revision Notes
00	10/05/2012	WS 10_23	View2

1

Preview

The information on this document could be subject to change without notice.

The constructor is not responsible for possible content mistakes or misprints that could be present in this manual.

Any reproduction, translation or copy of parts of this manual is forbidden without prior written authorization by the constructor.

WARNING:

Modifications not expressly approved by COBO Division 3B6 cause the loss of authorization to operate the system.

WARNING:

Before starting operations, the user should read and understand this manual and follow the contained instructions

2

Warnings

1.1 Use of the System

The following directions should enable the person responsible for the system, and the person who actually uses the instrument, to anticipate and avoid operational hazards.

The person responsible for the instrument must ensure that all users understand these directions and adhere to them.

Prohibited uses

- Using the system without instruction
- Using outside the stated limits
- Opening of the equipment by using tools (screwdrivers etc.)
- Carrying out modification or conversion of the product
- Use of accessories from other manufacturers without the express approval of COBO Divisione 3B6
- Inadequate safeguards at the surveying site (e.g. when measuring on roads, power lines)

⚠ **WARNING:**

The chance of injury, malfunctions and damage to the equipment if not used as specified. The owner has to inform the user of the hazards in use, protective and counter measures to take.

1.2 Areas of Responsibility

⚠ **WARNING:**

The person responsible for the instrument must ensure that the equipment is used in accordance with the instructions. This person is also accountable for the deployment of personnel and for their training and for the safety of the equipment when in use

The Person in charge of the instrument has the following duties:

- To understand the safety instructions on the product and the instructions in the User Manual.
- To be familiar with local safety regulations relating to accident prevention.
- To inform COBO Divisione 3B6 immediately if the equipment becomes unsafe.

1.3 Checks the user must perform

To ensure continuous and safe operations of the system the following checks must be performed regularly by the user.

Before to start to work with the system, following checks should be made:

- Cable integrity and connectors tightening

- Angle Sensors integrity and tightening

1.4 Hazards in Use

All users must follow the safety instructions given by the manufacturer and the directions of the person responsible for the instrument.

⚠ **WARNING:**

The absence of instruction, or the inadequate imparting of instruction, can lead to incorrect or prohibited use, and can give rise to accidents with far-reaching human, material, financial and environmental consequences.

3

Characteristics

3.1 VIEW2

3.1.1 Panel

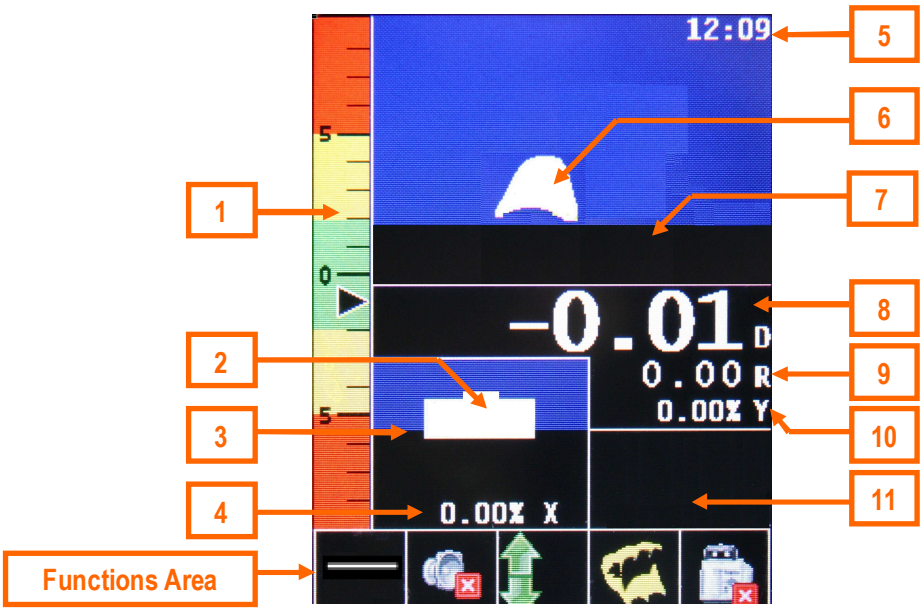
View2	Description
	LEFT/RIGHT ARROWS KEYS Refer to system in use, Digging or Weighing
	UP/DOWN ARROWS KEYS Refer to system in use, Digging or Weighing
	ENTER KEY Refer to system in use, Digging or Weighing

View2	Description
	SETTINGS KEYS Refer to system in use, Digging or Weighing
	FUNCTION KEYS Refer to system in use, Digging or Weighing

4

Digging System

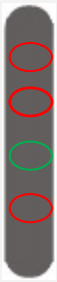
4.1 MAIN OPERATING SCREEN



Ref	Description
1	Graphical indication the relative depth (cm)
2	Real time bucket frontal view (from the cabin side) over the ground
3	The line below the front bucket view reflects the ground X slope
4	X-Axle set slope
5	Clock
6	Dynamic figure which represents the angular position of the bucket (lateral view from left side)
7	The line below the lateral bucket view reflects the ground Y slope
8	Depth value
9	Reach value
10	Y-Axle set slope
11	“Info box”: information about the active functions

FUNCTIONS AREA

Ref	Description
F1	**Depth function** :Longitudinal , Transversal (Y&X) Slopes disabled : Longitudinal , Transversal (Y&X) Slopes manual setting : Longitudinal , Transversal (Y&X) Slopes automatic setting : Profile active
F2	**Buzzer Function** : buzzer disabled : buzzer enabled
F3	**Max&Min Limits Function** : No limits set : Maximum Height set ; : Minimum Depth set ; : Maximum & Maximum limits set : Maximum Height reached : Minimum Depth reached
F4	**Bucket Number**
F5	**Laser Function** : Laser disabled : Relative laser enabled : Absolute laser enabled

Ref	Description
	**LEDs Bar** • Red LED: ON when the bucket is one meter higher than the reference zero. • Red LED: ON when the bucket is higher than the reference zero. • Green LED: ON when the bucket is on grade • Red LED : ON when the bucket is lower than the reference zero

4.1.1 Buttons

Key	Description
	Shift to the Weighing System (if enabled)
	Show the profile summary graph with Profile Function active
	Short press: Option Menu Long press: Setup Menu (diagnostic and calibration functions)
	Zero the Rotation Sensor Angle Reference
	Set the Depth Offset (Height Target)
	Switch Off the Alarm Clock buzzer (when active)
	Zero the Depth, Reach and Laser References
	Set the Reach Offset (Reach Target)

4.1.2 Bucket Icons

The bucket icons (lateral view from left side and frontal view from the cabin side) are real time indications to know how much the bucket is rotated.

The horizontal line reflects the ground (drawn in blue) eventually with the relative slope.

The line below the lateral bucket view reflects the Y slope, the line below the frontal bucket view the X slope.

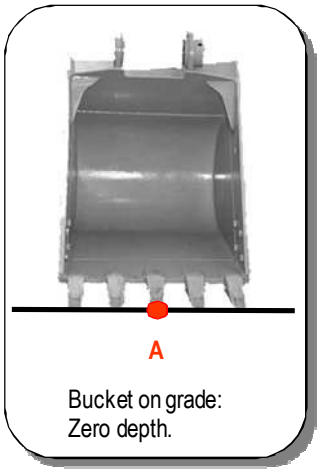
When the depth value is zero, the bucket blame are on the ground line (system refers indication to the centre of the blame).

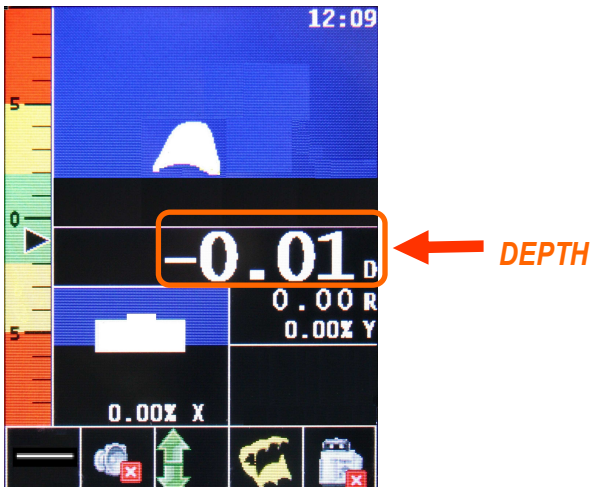
Please note that the bucket draw is an indication and doesn't reflect the real excavator bucket shape, so it's not an indication to work with the bucket bottom or with a blame corner if a X slope is in use.

4.2 DEPTH FUNCTION

Remember that the values are referred to the bucket blame centre.

4.2.1 Height Reference Zeroing





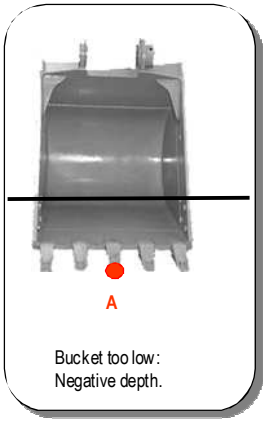
Set the Height Reference "0"

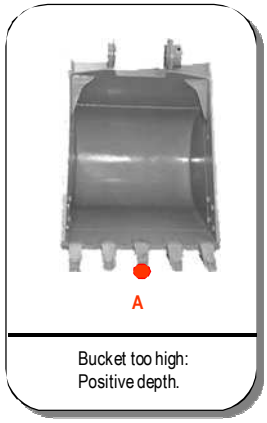
From the operating screen:

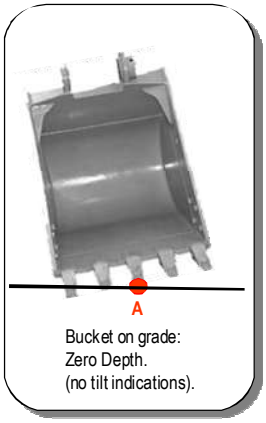
- Position the bucket on the ground in a desired reference point (A).
- Press to zero the depth value.

From now on the display will show the depth zero respect to the reference point acquired.

The depth below the reference point is negative, above positive.







Every time the machine will be moved it's necessary to take again the reference zero point.

Note: If the laser function is enabled the system does not zero the height on pressing the depth key because it is in "wait for laser beam" condition and the depth height zeroing (reference) is done with the laser beam acquisition.

4.2.2 Depth Offset Setting

Set the Height Target (the vertical distance from the acquired reference value A)

From the operating screen:

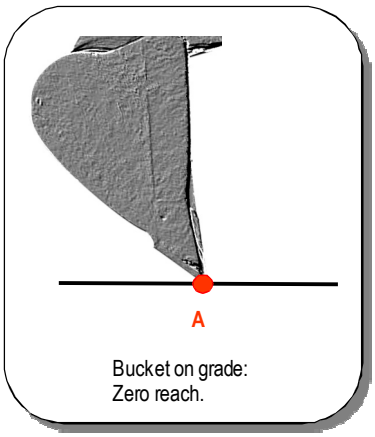
- Press to enter the setting : depth value will start to flash.
- Use , to set value or to fast zero it.
- Press to confirm.

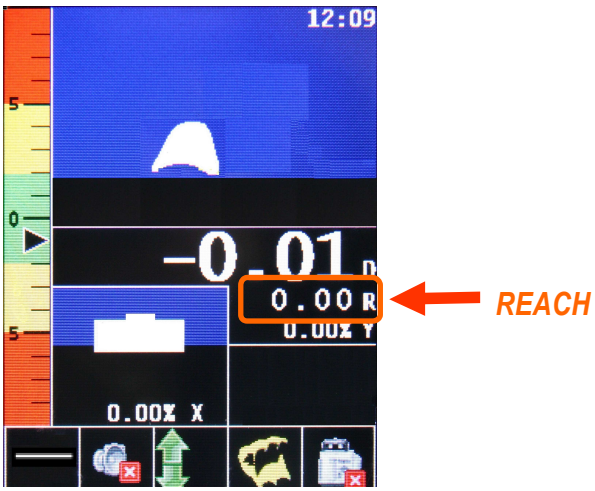
From now on, the target height is the reference zero value acquire plus/minus the set offset value.

4.3 REACH FUNCTION

Remember that the values are referred to the bucket blame centre.

4.3.1 Reach Reference Zeroing





Set the Reach Reference "0"

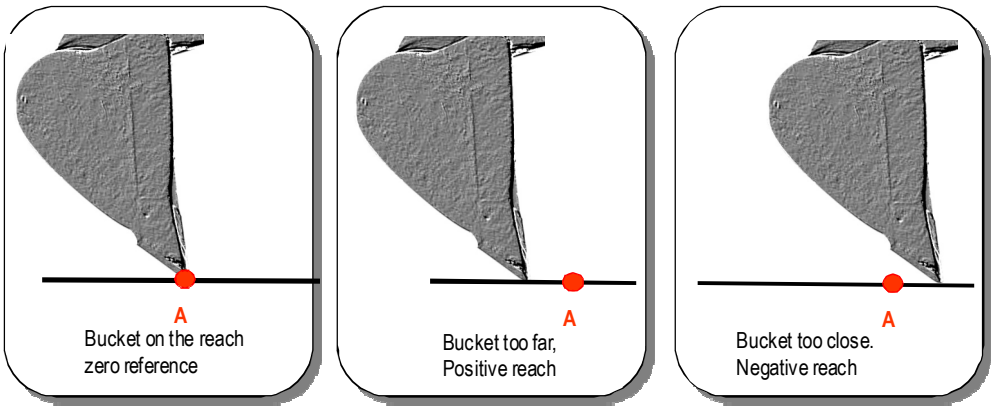
From the operating screen:

Position the bucket on the ground in a desired reference point (A).

Keep pressed to zero the reach value.

From now on the display will show the reach zero respect to the reference point acquired.

The reach closer to the cabin is negative, going away positive.



Every time the machine will be moved it's necessary to take again the reference zero point.

Note: If the laser function is enabled the system does not zero the height on pressing the depth key because it is in "wait for laser beam" condition and the depth height zeroing (reference) is done with the laser beam acquisition.

4.3.2 Reach Offset Setting

Set the Reach Target (the horizontal distance from the acquired reference value A)

From the operating screen:

Press to enter the setting : its value “R” will start to flash.

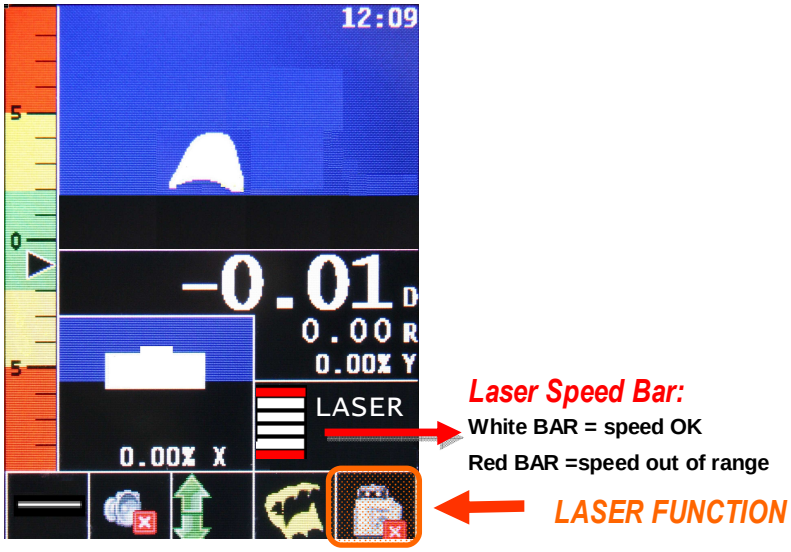
Use , to set value or to fast zero it.

Press to confirm.

From now on, the reach target is the reference zero value acquire plus/minus the set offset value.

4.4 LASER FUNCTION

4.4.1 Laser Setting



Laser not in use - disabled

Confirming this option the corrections taken by using the laser are not considered and enabling again a laser mode means that the laser acquisition has to be done again.

Laser in use – enabled

With a laser transmitter it's possible to refer the machine to the laser beam and work at a fixed height to the laser level itself instead to transport a quote from different landmark.

Set Laser Function

From the operating screen:

- Press to enter the Laser function.
- Press again to set the desired Laser mode (disabled / relative/ absolute). The icon of the selected function will start to flash.
- Press to confirm. The icon off.

4.4.2 Laser beam acquiring

The reference with the laser beam is done rising the laser receiver sensor trough the laser beam.

The rising movement has to be done at constant and moderate speed.

The speed indication is shown on the screen with a graph bar inside the “info box”. Keep the speed indicator inside the bar. To have a constant speed in the moment that the laser beam is crossed, start with the receiver at least a couple of meters below the laser beam plane before to start to rise the boom.

Relative Reference Laser

- Set the Relative Laser mode.
  The LASER message will appear into the “infobox” together with the vertical speed graph bar.
  Take care that the laser level is switched on. High rpm is preferred.
- Perform the laser acquisition and you will see the “ OK! “ message into the “infobox”.
- Move down the booms (laser receiver below the laser level) until the message “ OK” “ will be replaced with “REF.0” that means that it’s possible to perform the first depth zeroing
- Put the bucket to a defined height (usually the target depth) and pressing key.

After each acquisition the laser receiver is disabled to avoid unwanted acquisitions. The message “OFF“ will be shown.

To enable again the laser receiver for a new acquisition press .

To manually disable press .

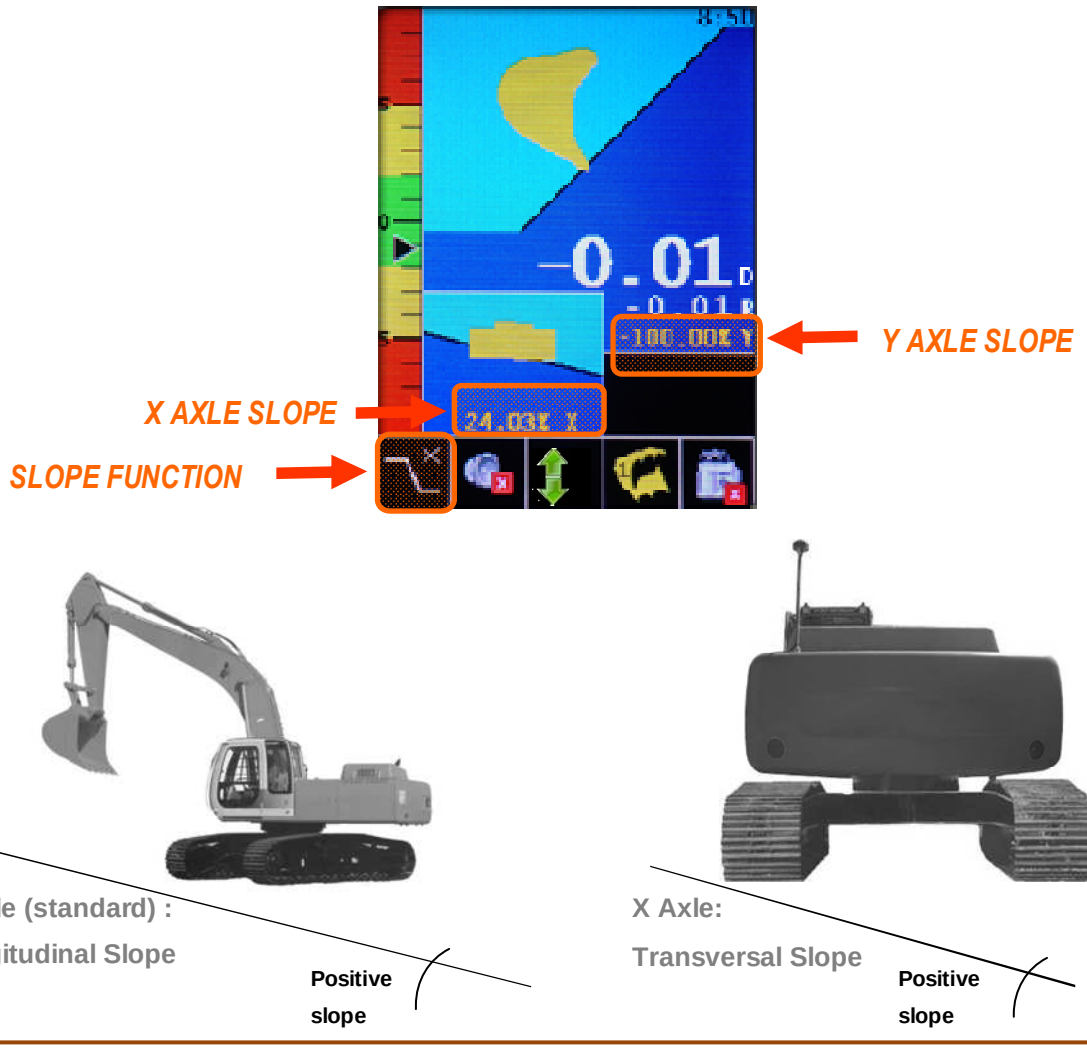
Every time that the excavator has been moved a new laser acquisition has to be done. The REF.0 procedure is no more needed, the reference in use (distance from laser to target height) still the acquired on the first laser caught and you will continue to work at the same distance from the laser.

Absolute Reference Laser

Differently from Relative Laser, instead to reach with the bucket the target height and do a REF.0, it’s possible to manually set a depth value and the target height (zero depth) will be at that distance from the laser beam.

- Set the depth offset from laser beam to the final ground depth. If the laser is 5 meters higher set -5.00 meters.
- Set the Absolute Laser mode.
- Proceed as with Relative Laser. Just after the first acquisition the REF.0 procedure is no more needed and the system is ready to dig, (“ OK! “ message on the screen, the depth zero value will be at the desired height).

4.5 SLOPE FUNCTION



4.5.1 Set Slope function

Slopes Settings:

- Longitudinal (standard) and transversal slopes disabled
- Slopes manual settings
- Slopes automatic settings

➢ Press F1 to enter the Slope function

➢ Press again F1 to set the Slope mode

➢ Press ↵ to confirm

4.5.2 Y Axle slope setting

Longitudinal Slope disabled / No slope in use

Disable slope when you work on a flat surface (0%)

If a value has been previously set is not considered (0.00% slope in use). A saved value will be available again when the slope mode will be recalled again.

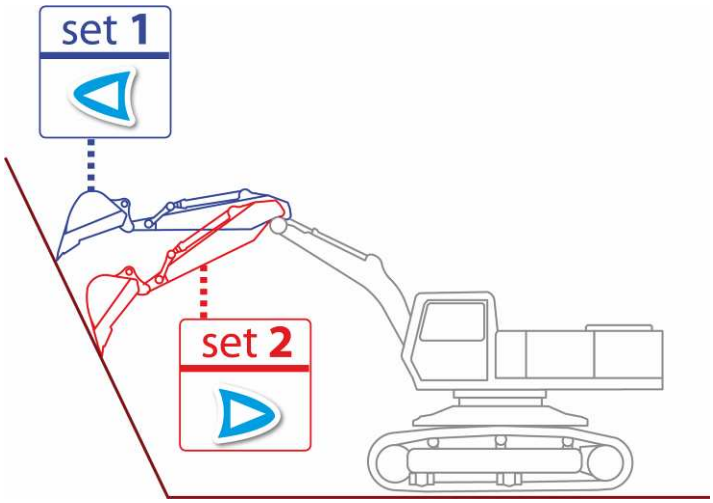
Longitudinal Slope Manual Setting

- Press to enable the manual mode.
- While the icon flashes use , to set value or to fast zero it.
  The slope is positive when higher in front of the excavator.

Longitudinal Slope Automatic Setting

If a piece of slope is already available you can automatically acquire is % value and use it to continue to dig.

- Press to select the proper icon. The “SET 1” message will display into the “infobox”.
- Press to acquire the point (bucket positioned on the far away point).
  The “SET 2” message will display into the “infobox”.
- Press to acquire the second point (closer to the cabin).
- Press to calculate the slope. The icon will stop to flash.



4.5.3 X Axle slope settings

Icons are with a X symbol for identification.

The slope X is positive when higher on the left side of the excavator (reference: operator seated in the cabin).

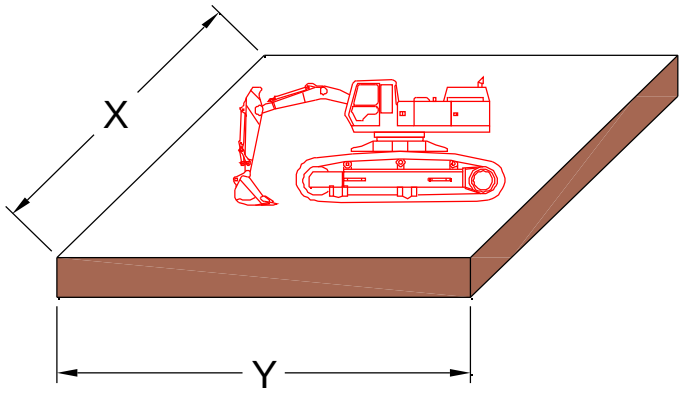
All the functions works as for the Y axle.

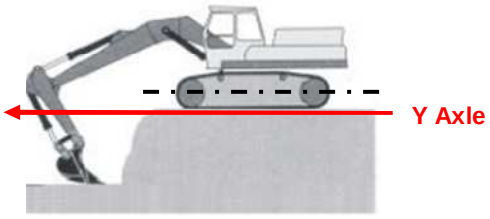
Transversal Slope disabled / No slope in use

Transversal Slope Manual Setting

Transversal Slope Automatic Setting

4.5.4 How to dig a sloped surface





Reference direction (Angle Zeroing): parallel to the Y Axle.

The excavator has to start aligned parallel to this "Y" field

No rotation sensor installed

- Reference direction (Angle Zeroing): parallel to the Y axle.
- The excavator has to start aligned parallel to this "Y" field side!
- If a laser transmitter is in use, the "Y" line generated by the laser has to be parallel too! With big slopes a bad alignment can generate a heavy error!

Note: The excavator can't be rotated

Rotation sensor installed (option)

The rotation sensor (option) allows to dig rotating the chassis even there are slopes set.

With the rotation sensor (option) enabled proceed as follow:

- Align the excavator chassis parallel to the Y axle of the surface (**reference direction:** angle zeroing)
- Then press to save the angle.
  A "**REF.Y"** confirmation message is shown into the "infobox". *The acquired angle it's now the "zero" angle of the chassis.*

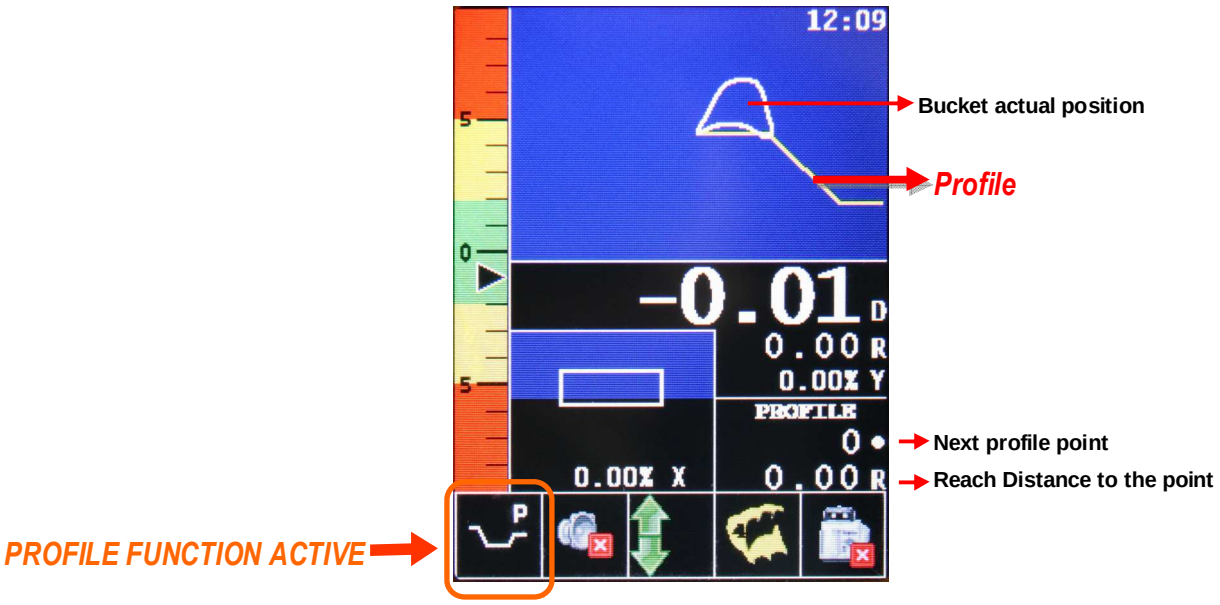
The following laser acquisitions (after the machine has been moved) can be taken at any rotation angle.

Note: If "NOROT" instead of "REF.Y" message is shown, means that the rotation sensor is not connected or not working.

4.6 PROFILE FUNCTION

A profile is the sequence of more different slopes along the same axle (Y).

Differently from the single slope it's possible to cross all the slopes without additional setting during the work.



This icon shows that a profile is in use. A single slope set before is no more considered when this icon is shown.

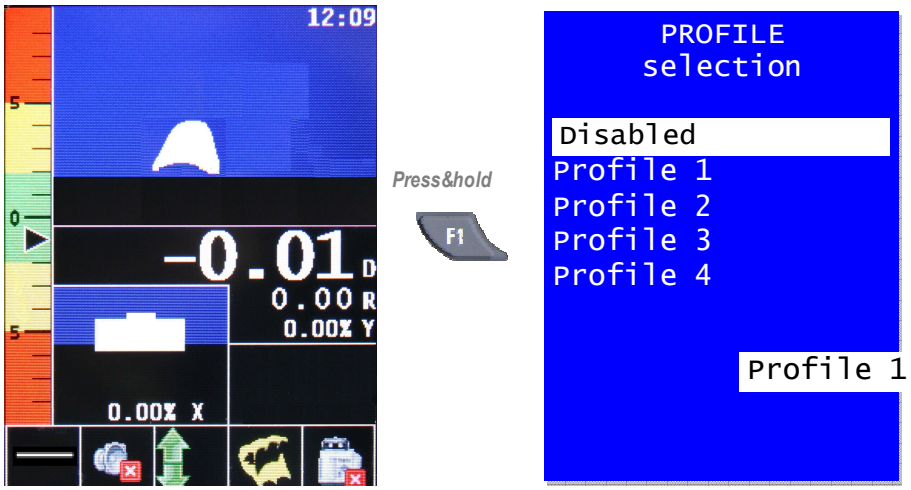
Info box:

In this box "PROFILE" is shown the following profile conjunction point that has to be reached (closer to the cabin) and the reach distance to it (R).

4.6.1 Set Profile function

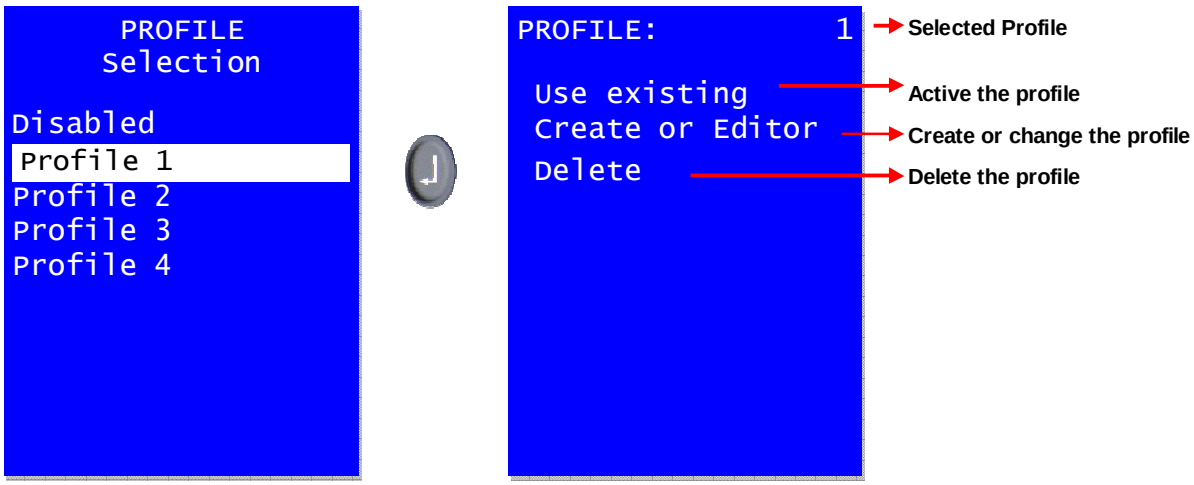
Select in this page the profile that has to be edited or used. It's possible to keep saved up to 4 different profiles.

- From the operating screen keep pressed F1 to enter in the "Profile Selection" page.



Disabled : No profile in use and return to the main working page.

Profile 1 ÷ 4: Enter the selected Profile Menu.

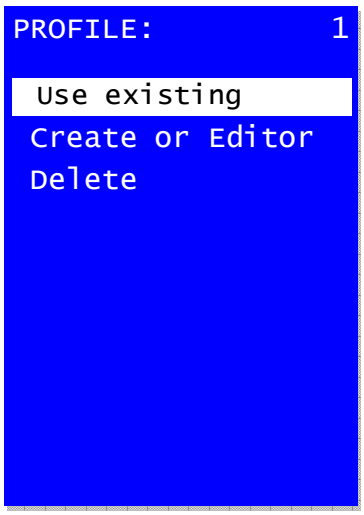


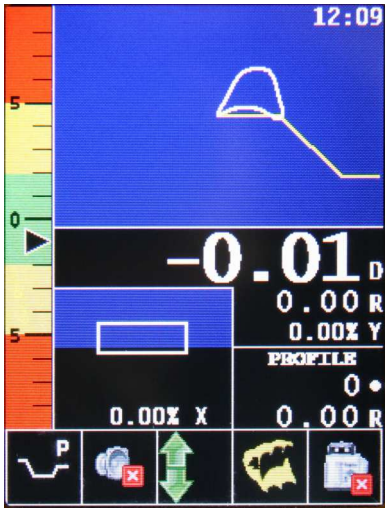
➢ Use , to select function and press to confirm.

➢ Press to go back to the previous screen.

4.6.2 Use Profile

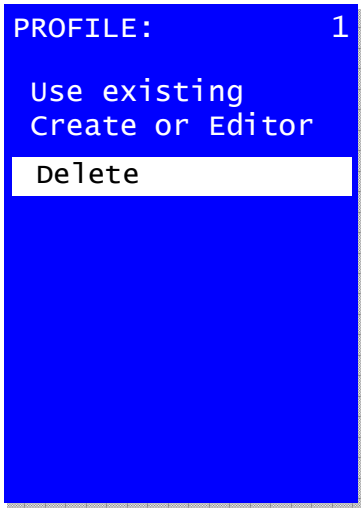
Activate the selected profile and return to the main working page.

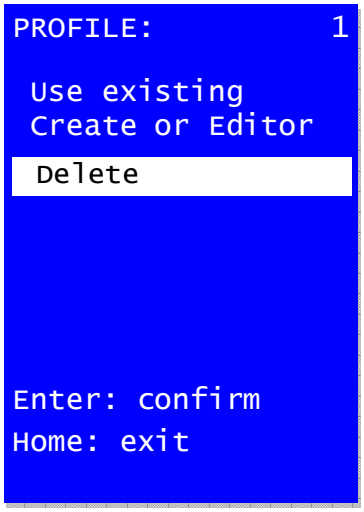




4.6.3 Delete Profile

Zeroing the selected profile.





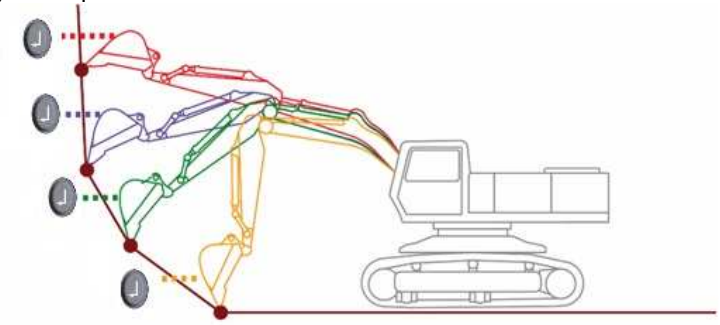
- Press again when requested to confirm.
- Press to go back to the previous screen.

4.6.4 Create Profile

Automatic Profile

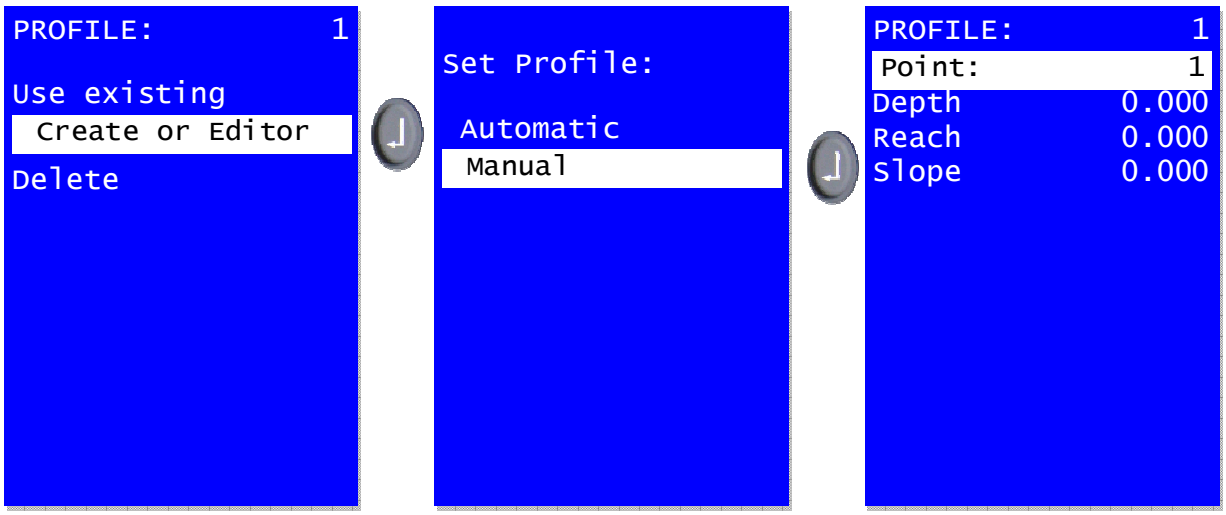
Create a profile putting the bucket on the conjunction points between the various slopes sections to acquire the coordinates (max 10 points).

- With the bucket steadily positioned on a conjunction point press to acquire. The point number increases. It's now possible to move to next point.
- Press on "End" command after that the last point of the profile has been taken to finish the acquisition. The graphical summary of the profile will be shown.



Manual Profile

Create a profile inserting manually the profile coordinates (junction points values).



Point

Profile point under editing. From 1 (start) to 10.

Depth / Reach

Set depth and reach values referred to the starting point.

First point (1 - start) has usually 0 depth and 0 reach: other points are referred to this.

In case some values is set in point 0, there will be an offset of the starting point respect to the physical point where REF.0 will be done with the bucket to reference the machine to the profile.

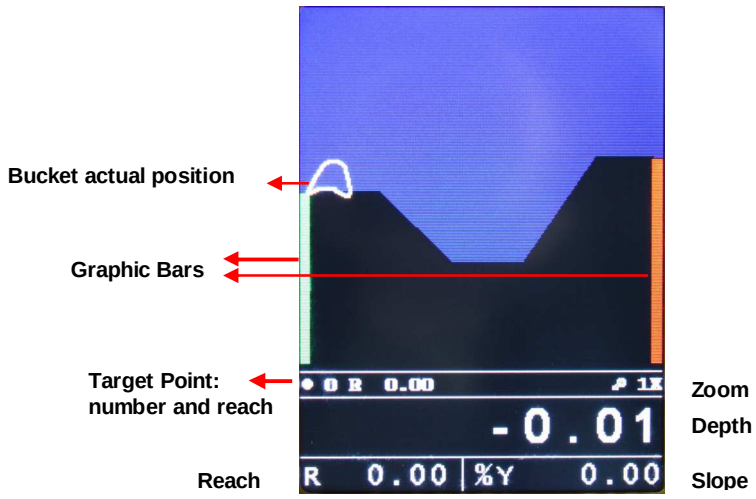
Slope

The *Slope* value is the % value automatically calculated that refers to the slope segment to be done between the actual selected point and the previous.

- Select function with , and to enter the setting.
- Use , to set value and to confirm.
- Press to end the profile. The graphical summary of the profile will be shown.

4.6.5 Graphical Summary

At the end of a profile setting (manual or automatic mode) it's shown a summary graph.



Graphic Bars

Green bar: Profile start

Red bar: Profile End

Target Point

Progressive point number () and reach "R": (value referred to the target point).

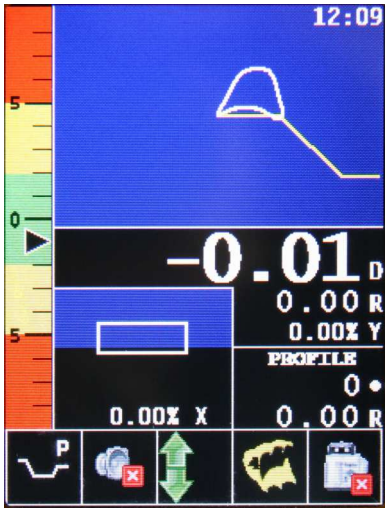
Depth / Reach / Slope

Depth and reach values are referred to the starting point.

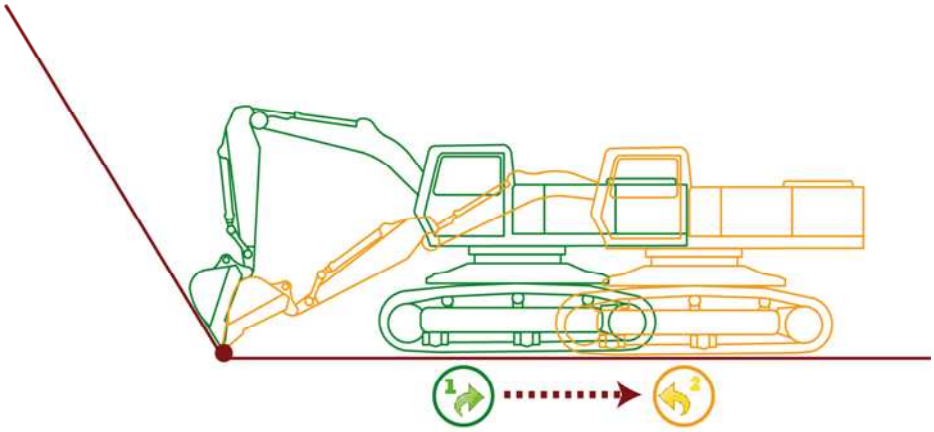
The slope (in %) is referred to the slope section that has to be dig to reach the actual selected point.

- Press or to return to the main working page.
- From working screen it's possible to recall the profile summary graph with .

4.6.6 Work with a profile



It's possible to move the excavator along the longitudinal axle of the profile in case the mechanical reach of the machine is not enough or for operative comfort.

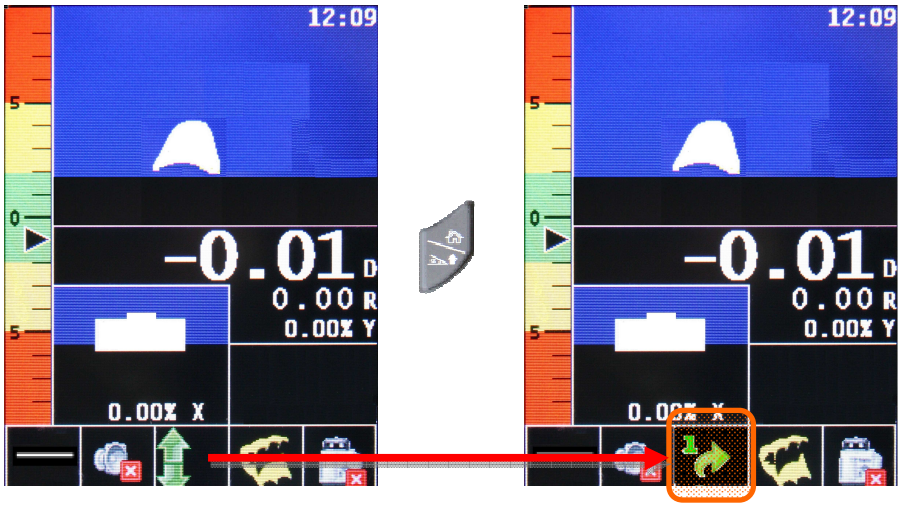


- Press F1 to see the "Set Reference" icon .
- Put the bucket on a profile point and press to store the reach.
- The "Keep Reference" icon is now show.
- Move now the excavator and put the bucket on the previous stored point.
- Press to complete the procedure and continue to work. The profile icon is show again.

It's possible to jump out from the procedure at any moment pressing .

4.7 MEMORY FUNCTION

The memory function provides a way to move the excavator when you are not using a laser as a reference (eg: moving the excavator on its tracks to dig to the same level at a different location on the site).



MEMORY REFERENCE SET

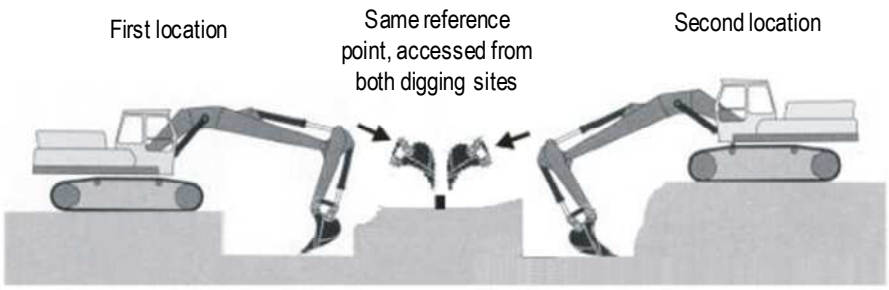
Memory Reference Icons:

- Set Reference
- Keep Reference

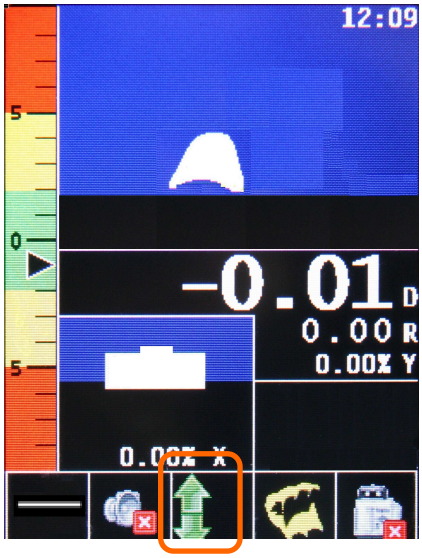
Work with the memory function

- Position the bucket tip on a reference point. Choose anything stable that can also be accessed from the next location. After moving the excavator, you will need to use this same reference point (or another point that is at exactly the same elevation).
- Press , the "Set Reference" will start to flash .
- Press to store this point. The reference icon off .
- Move the excavator to your next position and place your excavator bucket tip on that same reference point used in the previous step.
- Press again to flash the "Keep Reference" .
- Press to acquire the value. The reference icon off.

It's now possible to continue to work.



4.8 LIMITS FUNCTION



LIMITS FUNCTION

Limits Icons:

- No Limits
- Min Depth set
- Max Height set
- Min/Max Limits set

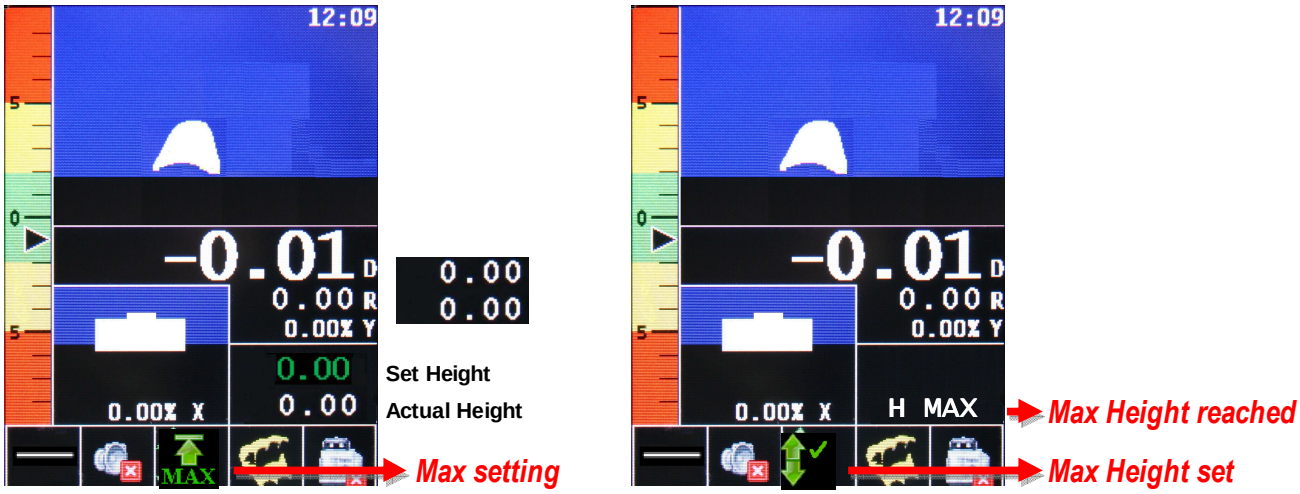
WARNING

These functions are only an indication and don't affect the machine movements at all. Note also that pivots and bucket blade (where indication are referred) are not really the lowest or highest point of the excavator. Indication on the display can have also a delay when the excavator is moved fast.

4.8.1 Limits off

- Press F3 to see the icon of the limit to delete (Max Height, Min Depth) will start to flash: MAX , min .
- Press to erase the set value. The MAX or min icon off and exits from the setting.

4.8.2 Max Height



Max Height

It's possible to save a maximum height, when the excavator reaches this elevation a warning on the screen is shown.

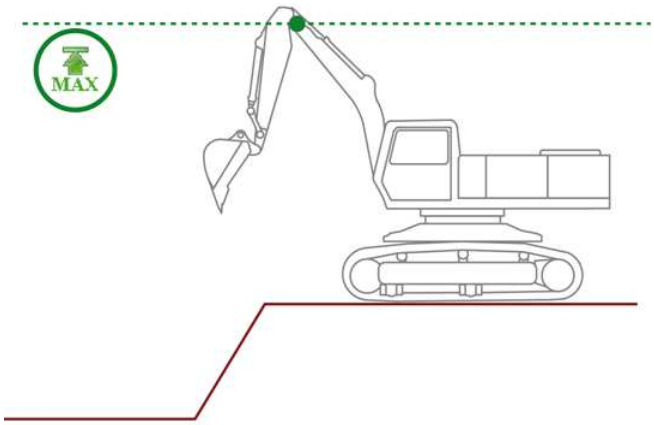
It's used the highest pivot of the excavator.

MAX Set max limit

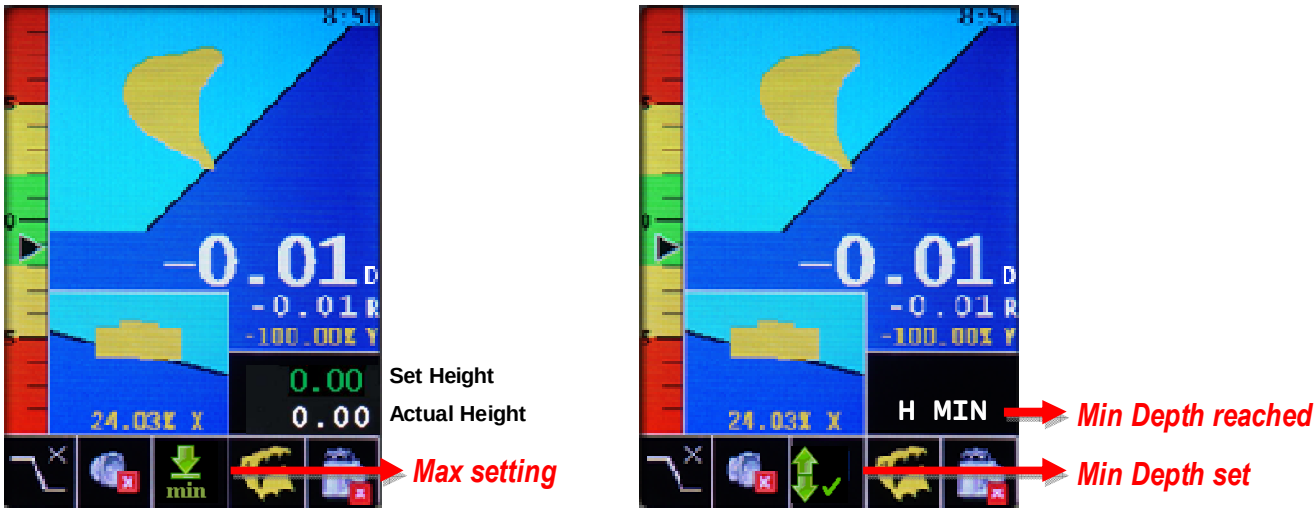
- Press F3 when the excavator it's at the maximum desired height. The "Max" icon will start to flash MAX. In the "infobox" the actual height value will flashes.
- Press ↵ to confirm max height setting.
- To exit without changes press F3 until the "No limits" icon will start to flash . Press ↵ to confirm.

The icon indicates a max limit set.

During the work, reaching this height, the "H-MAX" message will be shown into the "infobox" and the buzzer will sound.



4.8.3 Min Depth

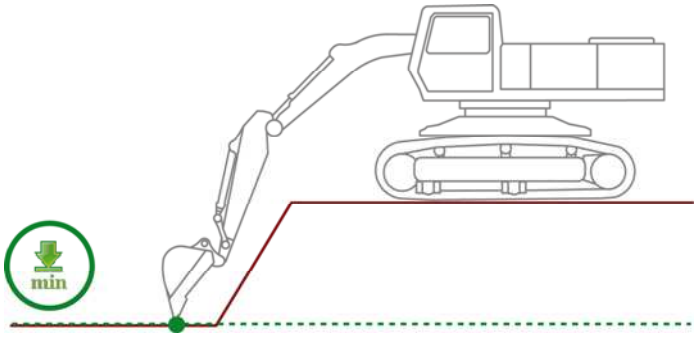


Enable/Disable limit

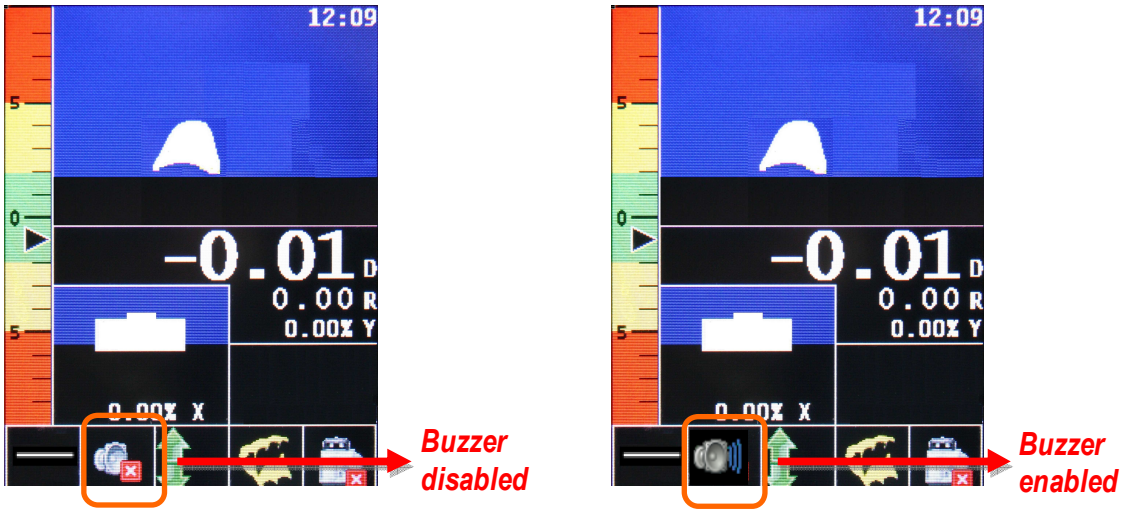
- Press F3 when the excavator it's at the maximum desired height. The "Min" icon will start to flash.
- Press to confirm/exit from mix height setting.
- To exit without changes press F3 until the "No limits" icon will start to flash. Press to confirm.

The icon indicates a max limit set.

During the work, reaching this height, the "H-MIN" message will be shown into the "infobox" and the buzzer will sound.



4.9 BUZZER



Buzzer Enabled

Buzzer steadily sounds when the bucket is on grade and discontinuously sounds away from zero depth.

Buzzer Disabled

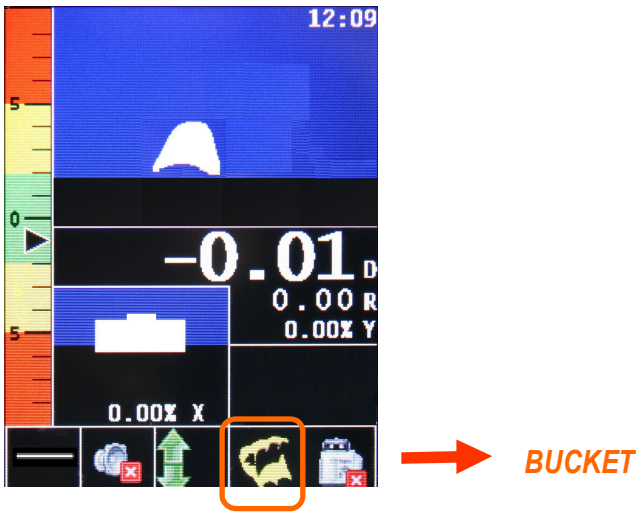
Bucket position doesn't affects the buzzer sound (disabled).

- Press F2 to enter the function. The Buzzer Icon will start to flashes
- Press again F2 to select the desired mode
- Press ↵ to confirm and exit from the setting

4.10 BUCKET FUNCTION

Control box can store up to 9 different buckets. This function allowed to select the bucket calibration to use.

The calibration of each bucket can be done by the system installer or directly by the user following the instruction at the end of this manual.

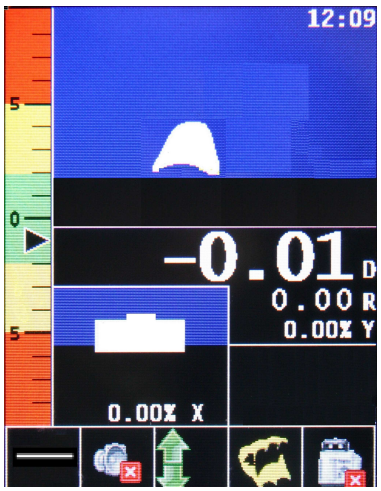


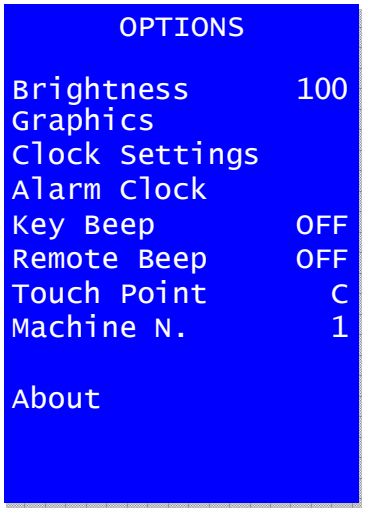
- Press F4 to enter the function
- Select the desired bucket with ◁ or ▷.
- Press ↵ to confirm and exit from the setting

NOTE: if the control box is used on 2 different excavators (machine 1 and machine 2) the 9 buckets are shared between the 2 machines.

4.11 OPTIONS MENU

- From the operating screen press to enter the Options Menu





Brightness

Display brightness settable from 0 to 100

Graphics

Menu to set the display item colours

Key Beep

OFF: no sound when a control box button is pressed

ON: sound when a control box button is pressed

Remote Beep

Touch Point

Machine N.

System can store up to 2 calibrations (same control box on 2 different machines). Select here the machine in use.

Clock Settings

Time and date setting menu.

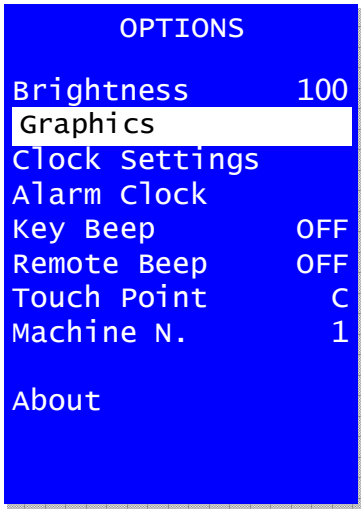
Alarm Clock

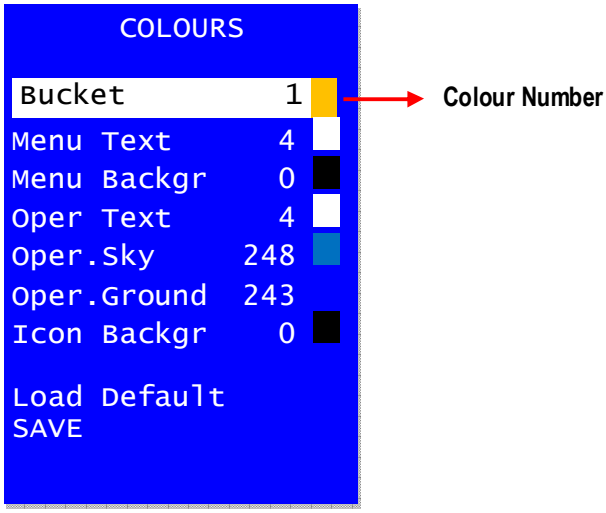
Alarm clock setting menu.

- Use , to select function and to enter the setting or menu
- Use , to set function and to confirm

4.11.1 Graphics

Is possible to change the control box display item colours. The colour number is shown together with an example box.





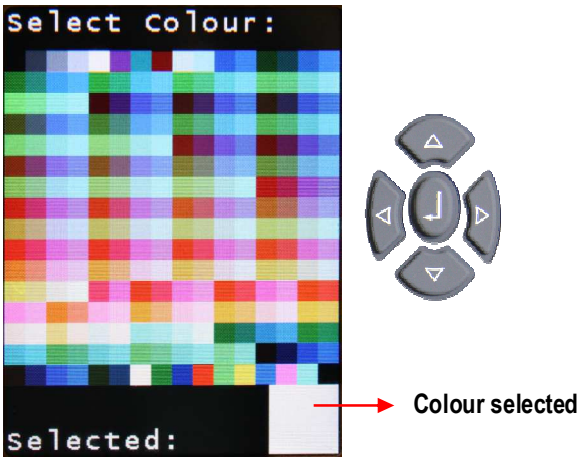
Load default

Load the default settings

SAVE

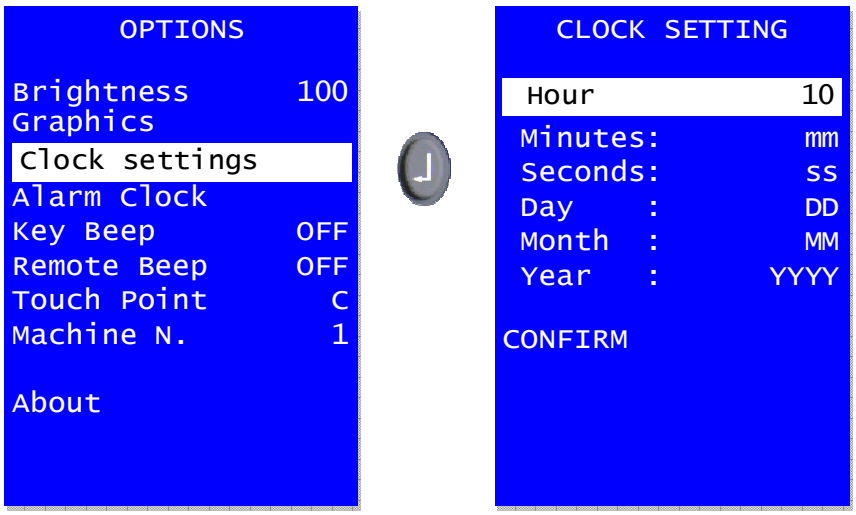
It's necessary to press over SAVE to keep the change the next time the system will be powered on.

- Use , to select item and press to enter the setting. The colours palette will be displayed.
- In the colour palette use arrows keys (up, down, left, right) to select the desired colour and "enter" key to confirm



4.11.2 Clock Setting

Control box clock setting.



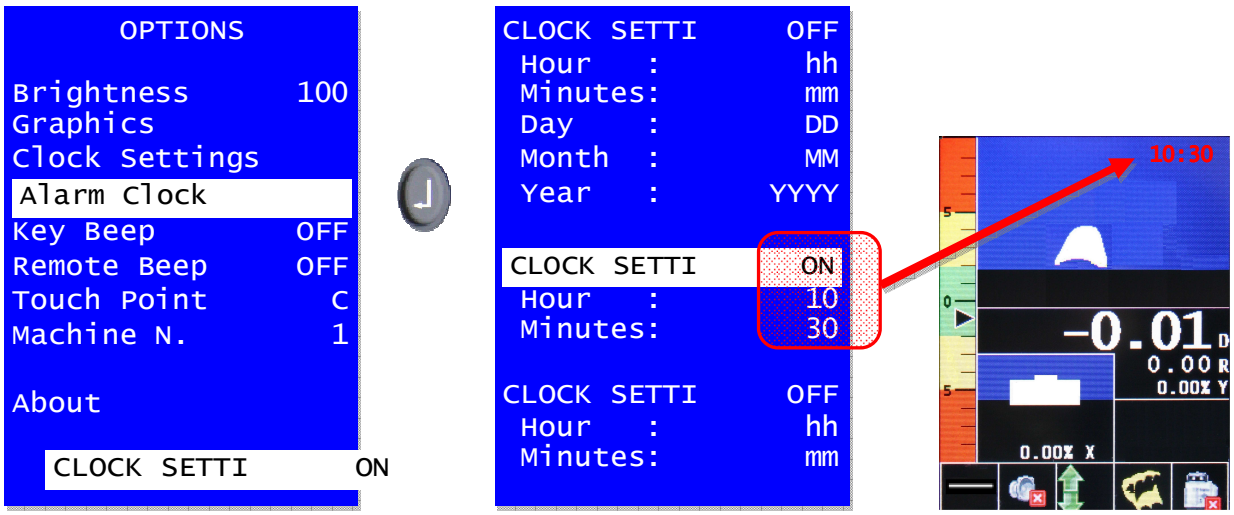
- Use , to select function and to enter the setting
- Use , to set the desired value and press confirm.
- Press over "CONFIRM" to save.
- Press to exit without changes.

4.11.3 Alarm Clock

When the alarm occurs, the buzzer will irregularly sound and the time indication in the working screen will became red.

1st Alarm Clock is used to sound at a specified time.

2nd , 3rd Alarm Clock sound always at the same time (like start and end of the day).



CLOCK SETT OFF/ON

Enable/disable (ON/OFF) the desired alarm clock

Hour/Minutes/Day/Month/Year

Alarm Clock Settings

Change the alarm clock time over the proper line

- Use , to select function and to enter the setting
- Use , to set the desired value and press confirm.
- Press to exit.
- Press to disable the alarm

5

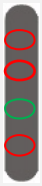
Weighing System

The system is based on the measurement of the pressure of the lifting cylinder in the rising phase (by means of the pressure transducer) and the calculation of the up speed (with an inclinometer).

5.1 MAIN OPERATING SCREEN

In the working screen is possible to check the truck load and all the active functions.

Ref	Description
1	Clock (hh.mm.ss)
2	Status and Instructions
3	Bucket number
4	Partial load (last bucket load)
5	Total load (material on the truck)
6	Truck load graphical bar / Depth value
7	Weighing Database displayed in sequence: max load, project, operator, material, client, truck

Ref	Description
	**LEDs Bar** **Weighing Instructions** • Red LED ON : move down the bucket • Green LED ON : bucket on grade • Red LED ON : move up the bucket **Max Load Indication** • Red LEDs ON: actual load > to the max load set • Green LED ON: actual load < to the max load set

SETTINGS

Ref	Description
	Auto-Book Auto-Book function active Auto-Book function disable
	Max Load Max load function non active Max Load set Max Load reached
	Tare Tare set No Tare set
	Count-Down Count-down function active Count-down function active

Ref	Description
	Buzzer Function Buzzer disabled Buzzer enabled

WEIGHING DATABASE

Database Area with selected item number

Key	Description
	Materials Menu Enter the Materials Database
	Clients Menu Enter the Clients Database
	Trucks Menu Enter the Trucks Database
	Projects Menu Enter the Projects Database
	Operators Menu Enter the Operators Database

KEYS

Key	Description
	Shift to the Digging System (if enabled)
	Shift between load graph bar and depth indication
	Short press: Enter Option Menu Long press: Enter Setup Menu (diagnostic and calibration functions)
	Tag the weighing

Key	Description
	Short press: Enter Printer page Long press: Print ticket
	Enter the Weighing Angle Setting Switch Off the Alarm Clock buzzer (when active)
	Enter the Tare Setting

With the digging system enabled together with the weighing system, pressing “down” key will appear the depth indication instead of the truck icon / truck % load graph bar.

5.2 WEIGHING PROCEDURE

During the weighing phase it's necessary to:

- Keep the machine on a levelled ground.
- Don't move the machine!
- The bucket should be completely closed when you start the weigh (or at the correct angle position if bucket angle check has been enabled) and can't be manually moved during the weighing phase.
- Don't move the dipper stick.
- On a 3 booms machine the middle boom (boom 2) has to be completely open.
- Don't stop the movement (dynamic weighing!).
- Keep a constant speed.

1. Press to perform the weighing.
   With "Auto-Book" function active, it's not needed to press the button every time that it's necessary to weigh because the weighing system it's always ready and this button will work as enable or disable switch of the weighing system.
2. Follow the on-screen instruction:
   If the boom is above the "start weigh" point, will be necessary to move down the boom.
3. When the boom will be in the correct position "Ready to weigh", with the indication "move up", it's possible to perform the weighing rising up the boom.
4. Overtaken the "start weigh" point there will be the on screen "Weighing…" indication and the control box buzzer will be ON.

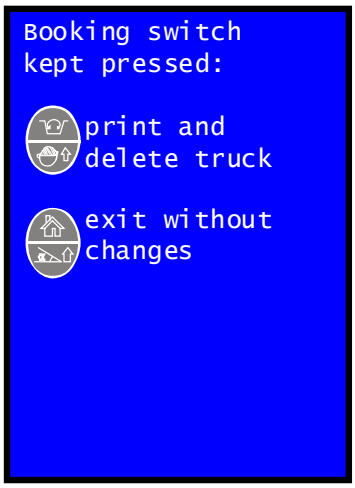
If the weighing is correct the load in the bucket will be shown on the partial weight and the value will be also added to the total. In a negative (or 0) load in the bucket will be computed, the value will be not added to the total.

If an error happens during the weighing phase there will be the relative message on the screen. The load will be not added to the total.

5.2.1 Remote Booking Switch

The remote booking switch it's an external button that has the same functionality of the button of the control box. When installed, it's usually placed on the excavator joystick. Can be also replaced by an available internal button of the joystick itself.

- Short press: Tag the weighing (replaces the button).
- Long press: the following page will appear:

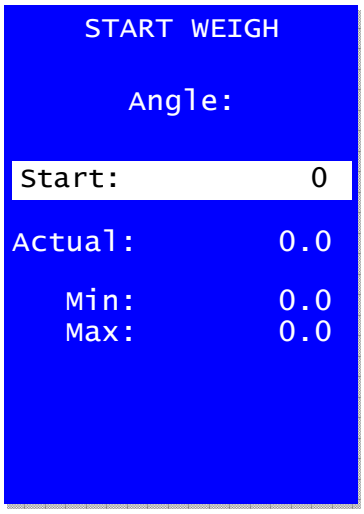


  - Press again the booking switch (or the button) to print the actual load (truck) and automatically delete the on-screen values.
  - Press to exit without changes.

5.2.2 Weighing Angle Setting

It's possible to select at witch angle of the first boom the system will start to weigh. This setting can be changed at any moment to best fit the working condition.

- From the main operating screen press to access the "START WEIGH" page.



Start

First boom Angle used as start weigh trigger

- Use keys to manually change the actual start weigh angle.
- Press to use the actual boom angle as start weigh angle.

Actual

Actual angle of the first boom

Min/ Max

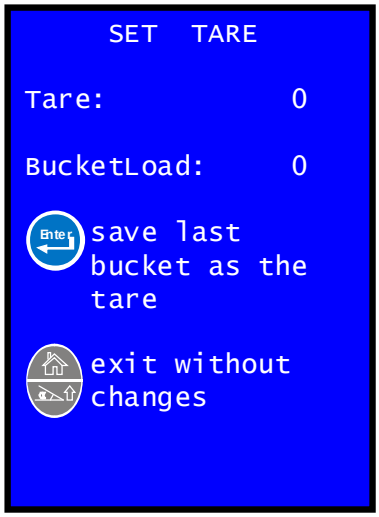
Weighing Range: Min and max angles (first boom) that can used as start weigh

5.3 TARE SETTING

To keep the system accurate, it's necessary to perform a new tare acquisition in particular work conditions:

- The machine is cold (first movements of the day). Repeat the check when the oil temperature is stable.
- The bucket has been changed (smaller/bigger).
- Some material stays in the bucket (not possible to unload it).
- The hydraulic circuit oil has been changed.

- From the main operating screen press to access the "SET TARE" page.



Actual Set Tare

Load of the last weigh

Tare Setting

- In the "SET TARE" page select the "Tare:" function and press to enter the setting

➢ Use , to set tare and to confirm

Tare Zeroing

- Perform an empty bucket weigh
- In the "SET TARE" page select the "BucketLoad:" function
- Press to update the tare value with the last bucket load

Tare Deletion

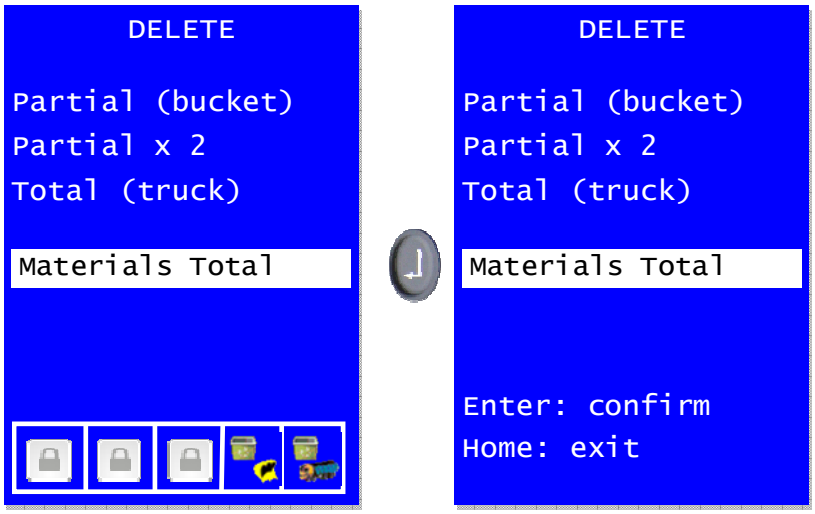
- Enter the "SET TARE" page

➢ Press to delete the set tare

➢ Press to go back to the operating screen.

5.4 PARTIAL/TOTAL DELETION

- From the main operating screen press to access the Delete Menu.



Partial (bucket)

To be used if the bucket has been wrong or accidentally weighed and the material will not be putted on the truck.

- Press to delete the last bucket weighed.

Total (truck)

- Press to cancel the total load (before start a new truck loading).

Partial x 2 (TRUCK FILL / RESIDUE MATERIAL)

When the last bucket load did not empty completely, to find out the effective total quantity unloaded, weigh the material which has remained in the bucket and use this function. This function will remove twice the last value weighed from the total so that you can find out the total value of material which has really been put into the truck.

- Use to select the function and press to enter.

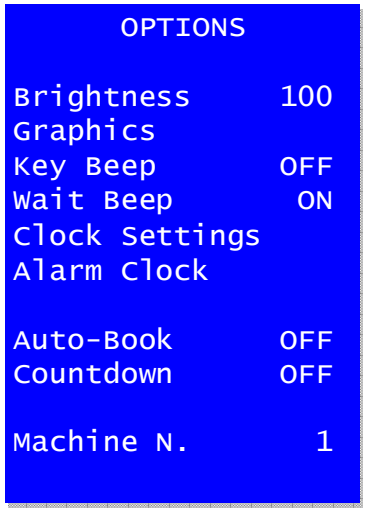
Materials Totals

To delete the totals in the memory (example material summary totals).

- Use to select the function and press to enter.
- Press to confirm the deletion.
- Press to go back to the previous screen. Once confirmed, the screen goes back to the operating screen.

5.5 OPTIONS MENU

- From the main operating screen press to access the menu



- ➢ Use , to select functions and to access the setting.
- ➢ Use , to enable/disable functions and to confirm.
- ➢ Press to go back to the operating screen.

Brightness, Graphics, Key Beep, Clock Settings, Machine N.

This functions are described in the Digging Mode “Options Menu”.

5.5.1 Buzzer function (Wait Beep)

Wait Beep function enabled the buzzer will sound (flashing) when the weighing is booked. The frequency changes if the boom is higher or lower than the start weigh point.

ON: Function enabled

OFF: Function disabled

5.5.2 Auto-Book function

With this function enabled is possible to weight material that will be not loaded on the truck (moving it, levelling the ground) that has to be manually deleted with delete partial command.

ON: The weighing function is always enabled. This function avoids to press button before to weigh. The weighing procedure will be activated every time that the first boom overtakes the start weigh angle.

OFF: Function disabled The weighing has to be tagged every time. Necessary to press to tag the weight.

5.5.3 Countdown function

Countdown function to weigh decreasing from the truck max load.

ON: Function active. The initial value for the scalar counting is the value set as maximum load (to set the maximum load see the dedicated page in this manual).

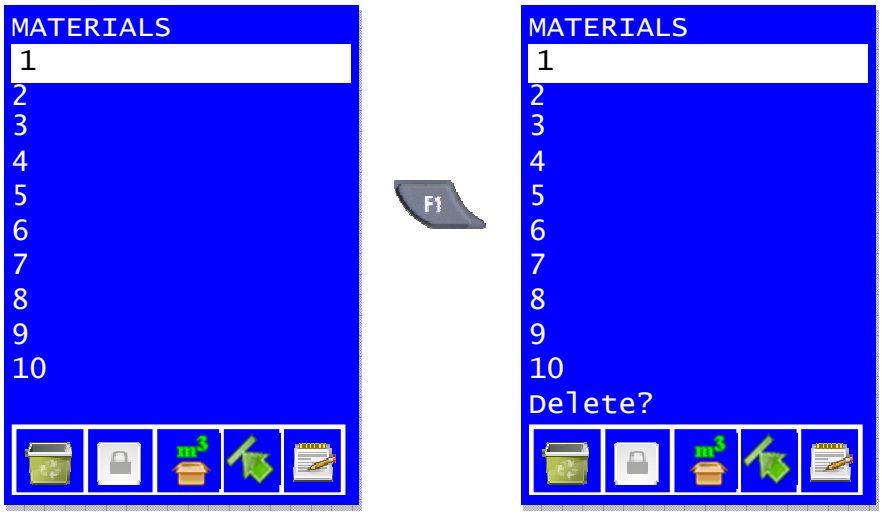
On activating the Countdown function the maximum load value is shown on the display. Each partial is subtracted from the maximum load and the maximum load exceeded will be indicated on the screen with a warning when the load drops below zero.

OFF: Function disabled. The partial load is added to the total load at every weighing.

5.6 MATERIALS MENU

System can store up to 200 different materials, each with a name up to 16 characters long.

- From the main operating screen press F1 to access the menu



- ➢ Use , to select materials (10 materials for page)
- ➢ Use , to scroll materials pages
- ➢ Press to go back to the operating screen or exit a function
- ➢ Press F4 to return to the first material page

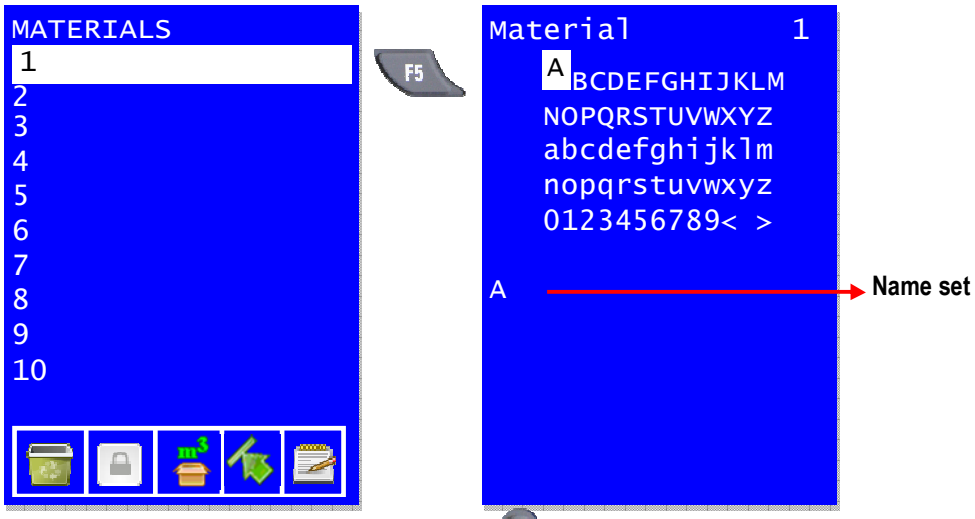
Settings

- ➢ Press to set the material to weigh and return to the operative screen.
- ➢ Press F3 to set the material density
- ➢ Press F5 to set the material name

Delete Material

- ➢ Press F1 to delete the selected material data deletion
- ➢ Press to confirm

5.6.1 Set names



- Use , to select value and to enter it.
- Press to confirm value and return to the previous page.

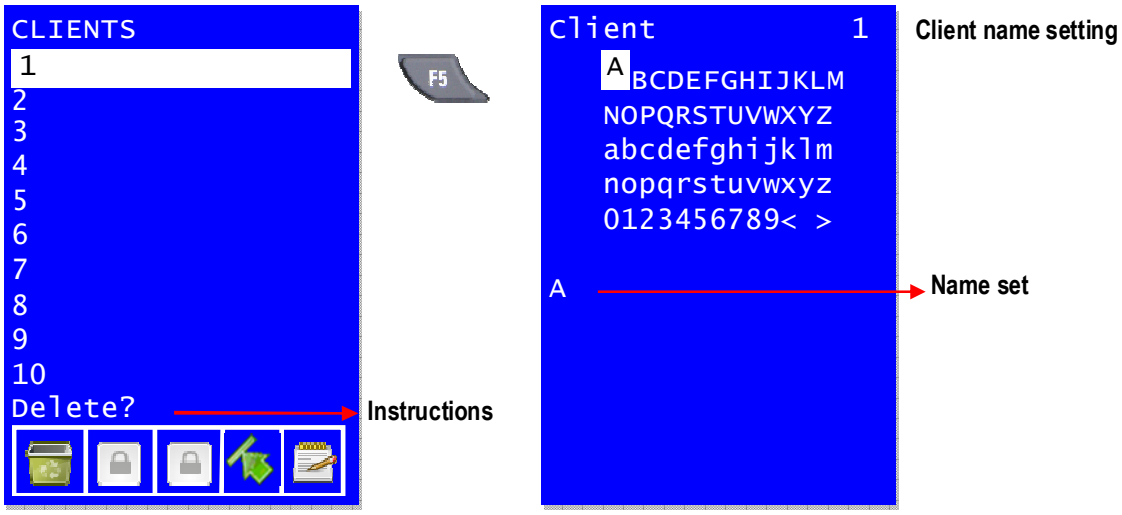
5.6.2 Set density

- Use , to set value (available only in Kg/m3).
- Press to confirm value.
- Press to go back to the previous screen.

5.7 CUSTUMER MENU

System can store up to 500 different clients, each with a name up to 16 characters long.

- From the main operating screen press F2 to access the “CLIENTS” menu.



- Use , to select clients (10 clients for page) .
- Use , to scroll clients pages
- Press to go back to the operating screen or exit a function
- Press F4 to return to the first client page

Settings

- Press to set the client and return to the operative screen.
- Press F1 to enter the selected client data deletion and confirm with key.

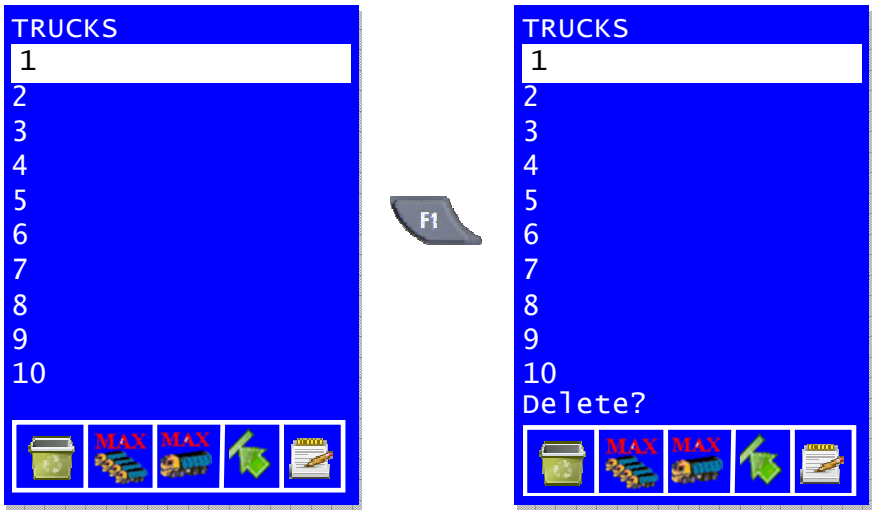
Set Client name

- Press F5 to set the client name
- Use , to select value and to enter it
- Press to confirm value and return to the previous page

5.8 TRUCKS MENU

System can store up to 500 different trucks, each with a name up to 16 characters long.

- From the main operating screen press F3 to access the menu.



➢ Use , to select trucks (10 for page) .

➢ Use , to scroll trucks pages

➢ Press to go back to the operating screen or exit a function

➢ Press F4 to return to the first truck page.

Settings

➢ Press to set truck and return to the operative screen.

➢ Press F2 to set the max load for all the trucks.

➢ Press F3 to set the max load that the truck can handle.

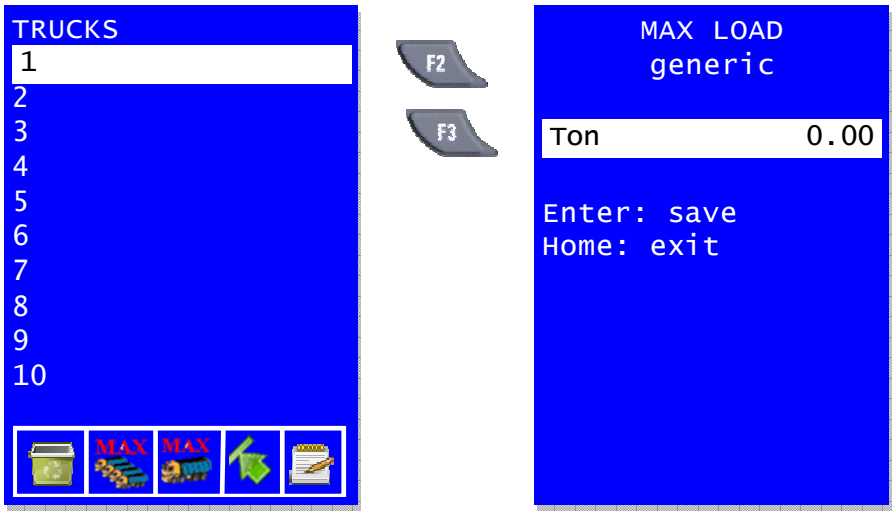
➢ Press F5 to set the truck name.

Delete Truck

➢ Press F1 to enter the selected truck data deletion

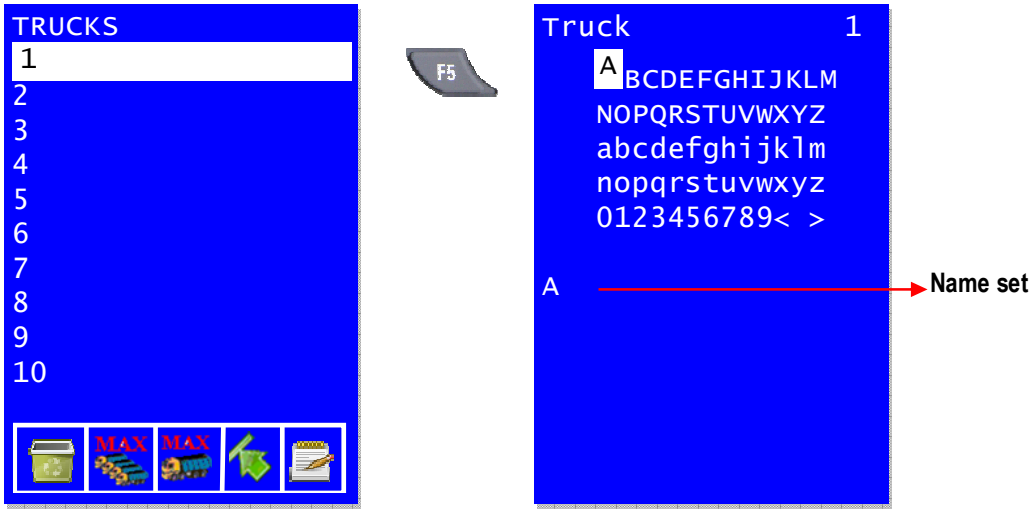
➢ Press to confirm

5.8.1 Set max load



- Use , to set value.
- Press to confirm value.
- Press to go back to the previous screen.

5.8.2 Set names

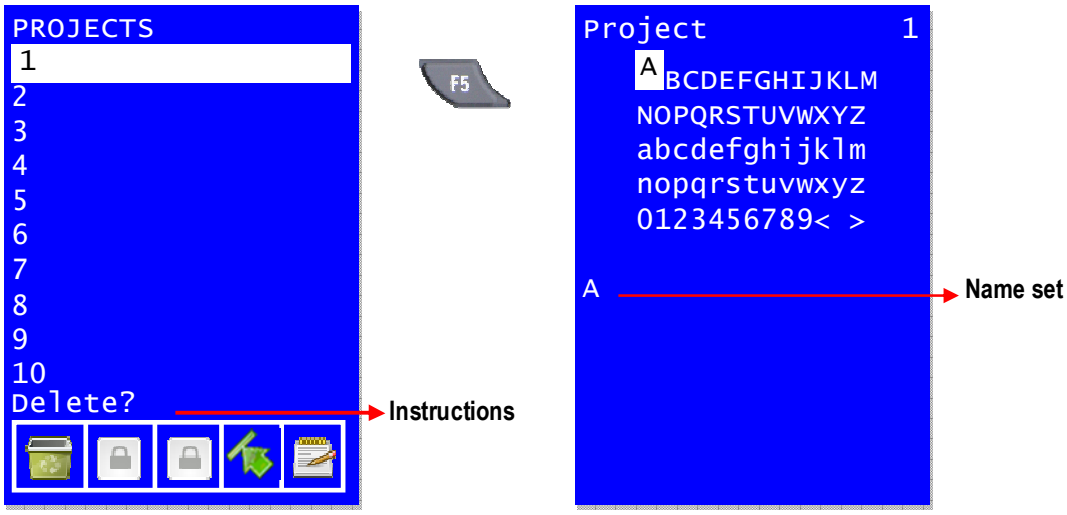


- Use , to select value and to enter it.
- Press to confirm value and return to the previous page.

5.9 PROJECTS MENU

System can store up to 100 different projects, each with a name up to 16 characters long.

- From the main operating screen press F4 to access the "PROJECTS" menu.



- Use , to select projects (10 projects display for each page) .
- Use , to scroll projects pages
- Press to go back to the operating screen or exit a function
- Press F4 to return to the first project page.

Settings

- Press to set the project and return to the operative screen.
- Press F1 to enter the selected project data deletion and confirm with key.

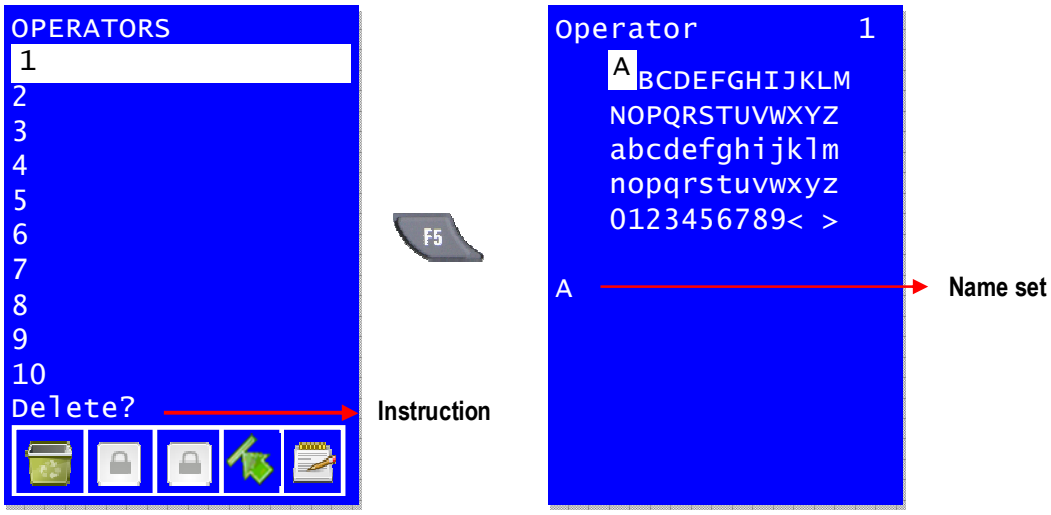
Set project name

- Press F5 to set the project name.
- Use , to select value and to enter it.
- Press to confirm value and return to the previous page.

5.10 OPERATORS MENU

System can store up to 50 different operators, each with a name up to 16 characters long.

- From the main operating screen press F5 to access the "OPERATORS" menu.



- Use , to select operators (10 projects display for each page) .
- Use , to scroll operators pages
- Press to go back to the operating screen or exit a function
- Press F4 to return to the first operator page.

Settings

- Press to set the operator and return to the operative screen.
- Press F1 to enter the selected operator data deletion and confirm with key.

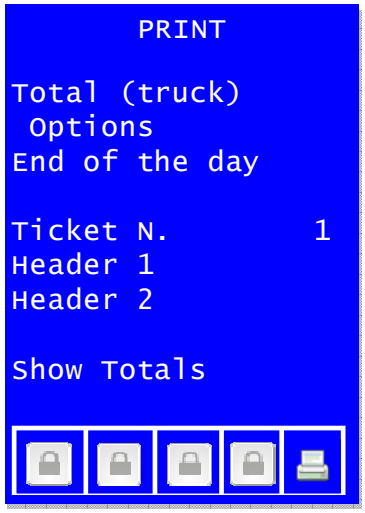
Set operator name

- Press F5 to set the operator name.
- Use , to select value and to enter it.
- Press to confirm value and return to the previous page.

5.11 STP6 PRINT MENU

Print Menu for printer STP6.

- From the main operating screen press to access the "PRINT" menu.



Total (truck)

Print the total load of the actual truck.

Options

Menu of the additional information that can be enabled/disabled in the ticket options page.

End of the day

Print summary Menu

Ticket N. Sequential number of the printer ticket automatically increased at every total (truck) print.

- Press to enter the setting , or to set value. Press to confirm.
- Press directly to return to "1".

Header 1 / Header 2

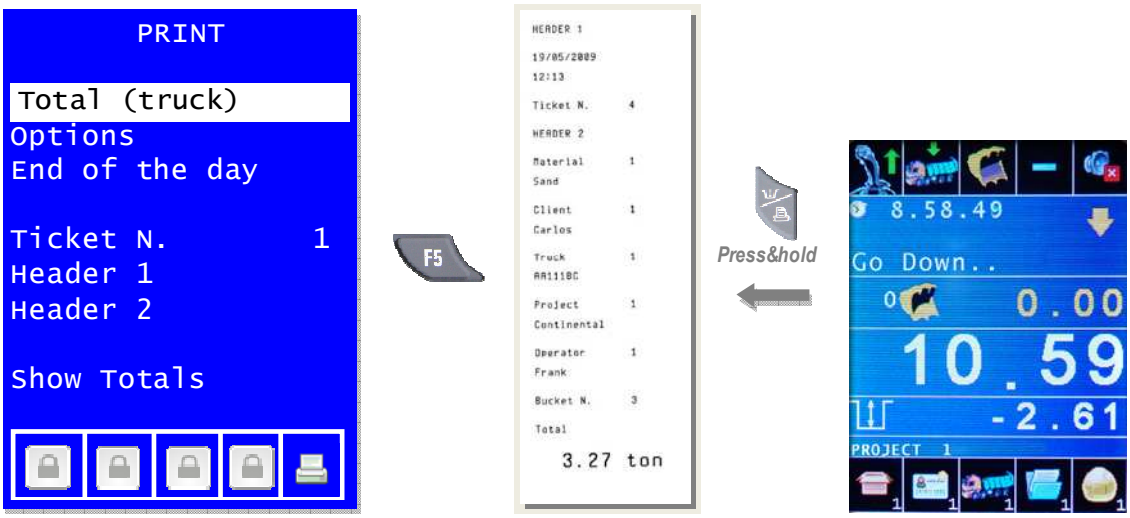
First and second header of the ticket

Shows Totals

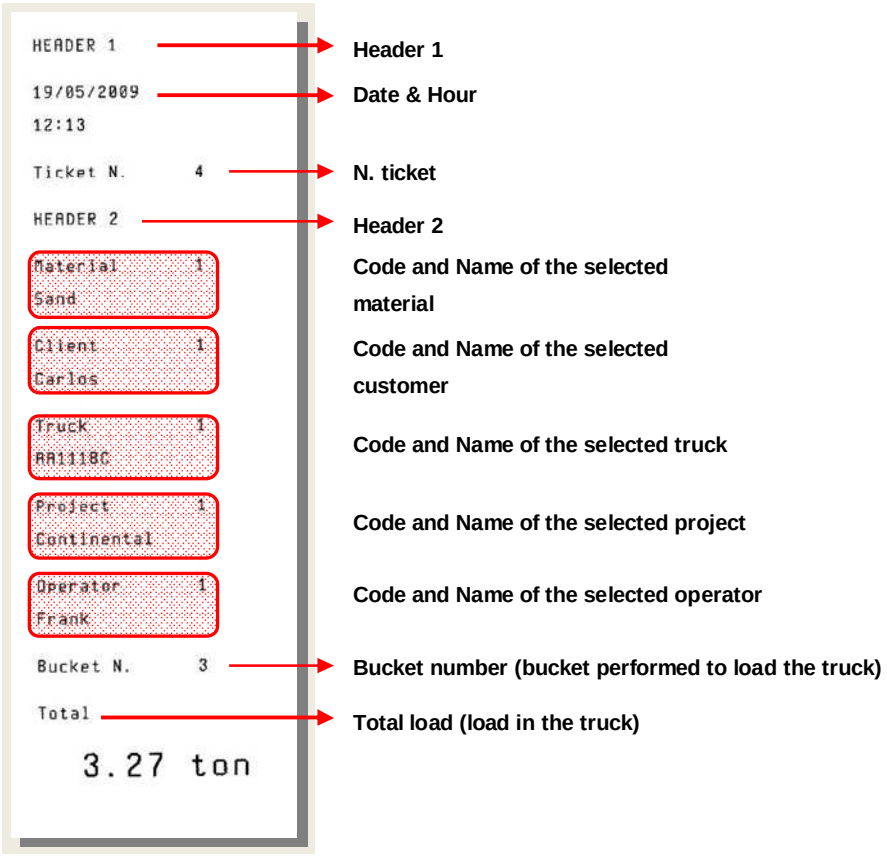
Totals Menu

5.11.1 Total (truck): Print Ticket

Printing of the total load of the actual truck. The ticket has various additional information that can be enabled/disabled in the ticket "OPTIONS" menu.

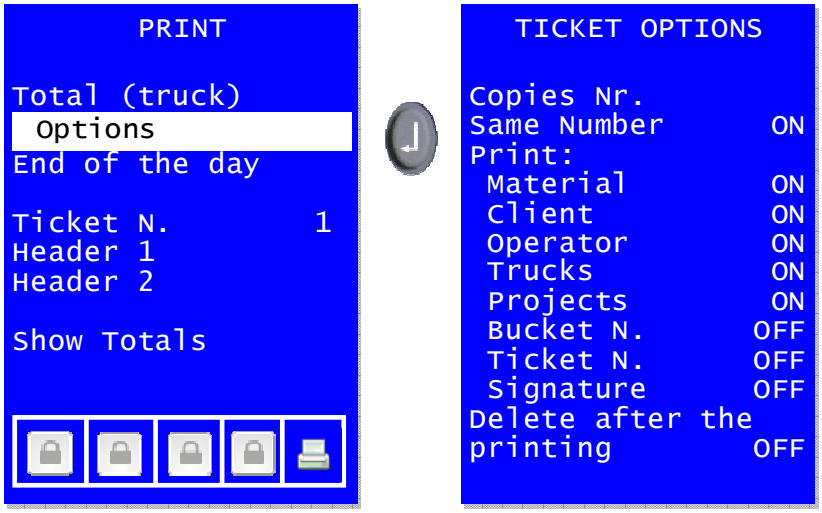


- From the "Print Menu" press F5 to print the ticket.
- The ticket can be also printed immediately from the main operating screen by keeping pressed .



5.11.2 Options

It's possible to customize the printer ticket in the **Options** menu.



Copies Nr.

Number of copies printed automatically.

Same Number

ON: Keep the same ticket number for all the copies printed automatically.

Print (Material, Client, Operator, Trucks, Projects, Bucket N., Ticket N., Signature)

Ticket optional information

ON: Optional information included in the ticket

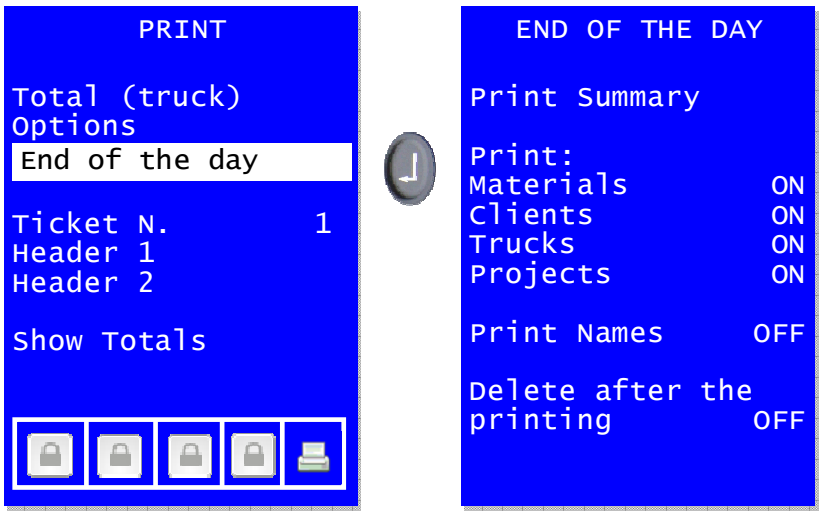
Delete after the printing

ON: for zeroing the actual truck load automatically after the printing.

- Press to enter the setting and use , to set (ON/OFF or values).
- Press to return to the previous page.

5.11.3 End of the day

At the end of a truck load, when the "Delete Total" function is used, the total load shown on the display is added in a dedicated memory that creates the history (summary) of the loaded material called "**totals**" (end of the day summary). Is recorded all the material loaded separated by Materials, Clients, Trucks and Projects.



Print Summary

Pressing will be printed the total of every item.

Eventually it's possible to choose what has to be printed (Print: OFF/ON).

Print :Materials / Clients / Trucks / Projects Enable/disable the totals to print.

- **ON** : Total to print
- **OFF** : Total not to print

Print Names Enable/disable the printing of the eventually materials, clients, trucks and projects names.

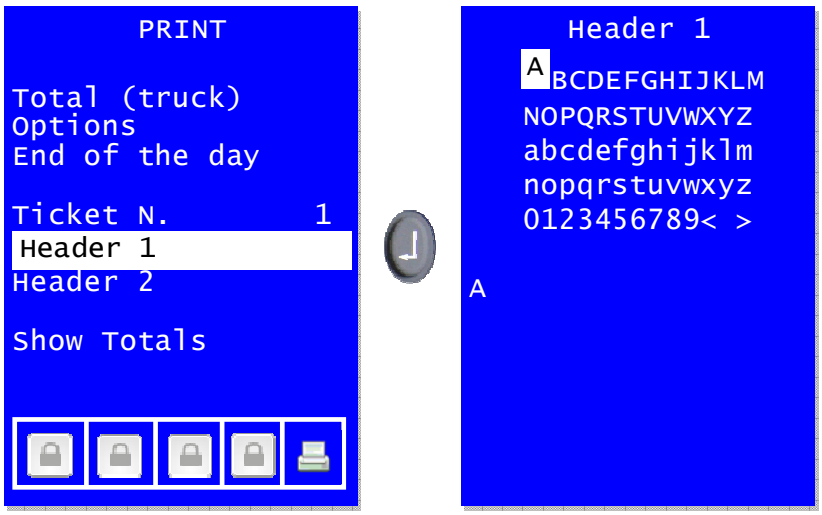
- **ON:** Print names
- **OFF**: Not print names

Delete after the printing

- **ON:** The totals database will be automatically deleted at the print end.
- **OFF:** The totals database will stay in memory and incremented (in case of new loads) up to the use of the function "Materials Total" from the DELETE menu.
- Press to enter the setting and use , to set. Confirm with key.
- Press to return to the previous page.

5.11.4 Header 1 / 2

It's possible to customize the ticket header.



Header 1 / 2

In the ticket header 1 it's possible to set 8 lines of 16 characters that will be printed at the beginning of the ticket.

In the ticket header 2 it's possible to set 8 lines of 16 characters that will be printed below the date and time.

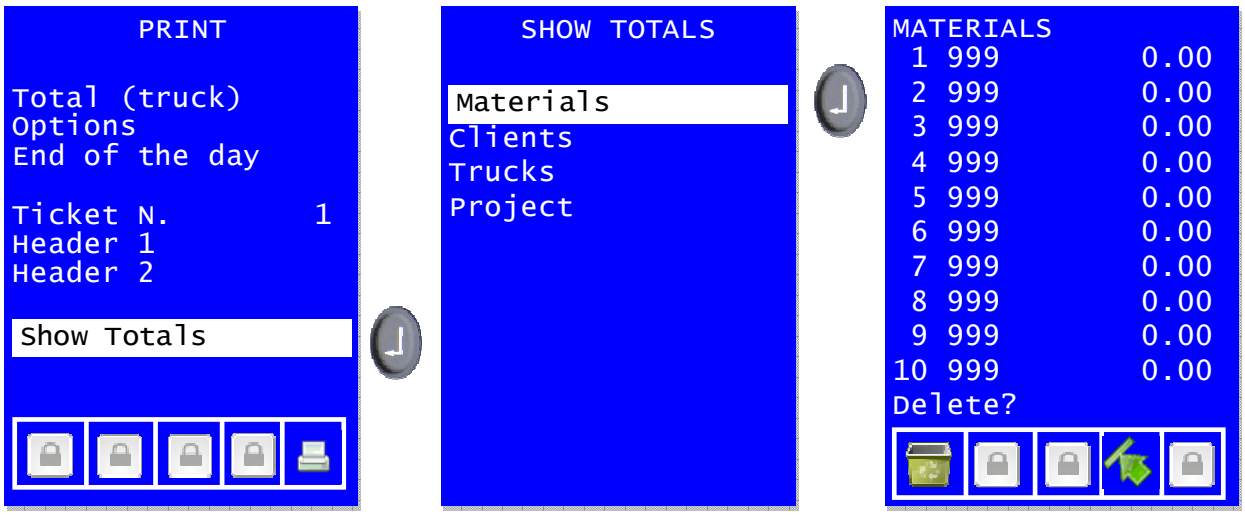
- To set a name select in the text matrix the desired character using the arrows and press to add it to the text in creation.

  It's possible to use the special character "<" and ">" to move the cursor in the text and change/correct a character.

- Press to confirm value and return to the previous page.

5.11.5 Show Totals

Totals Summary Menu



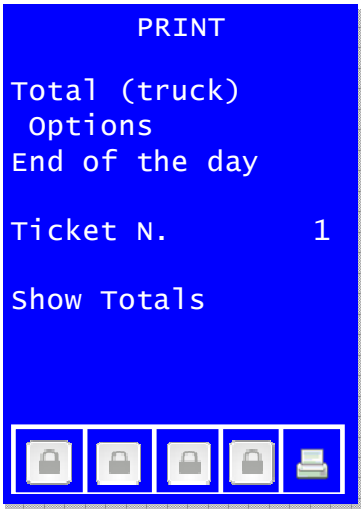
The complete list of the selected item with is total load is shown.

- Use to scroll pages
- Press to singularly zero the total of each material and confirm with . To zeroing all the totals summary use “Materials Total” in the “Delete” menu.
- Press to return to the first page.
- Press to go back to the operating screen or exit a function

5.12 STM295 PRINT MENU

Print Menu for printer STM295

- From the main operating screen press to access the “PRINT” menu.



Total (truck)

Print the total load of the actual truck.

Options

Menu of the additional information that can be enabled/disabled in the ticket options page.

End of the day

Print summary Menu

Ticket N. Sequential number of the printer ticket automatically increased at every total (truck) print.

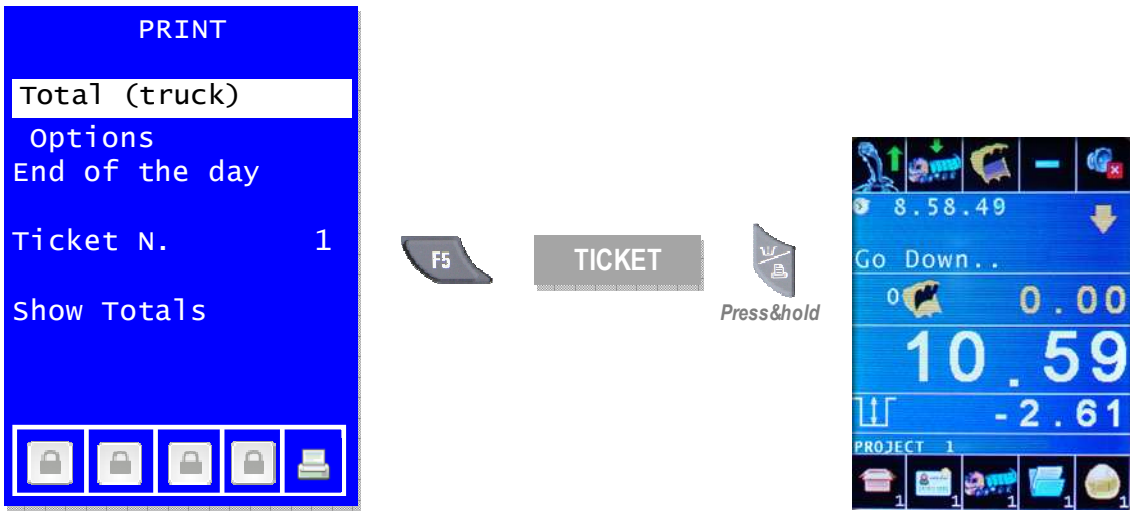
- Press to enter the setting , or to set value. Press to confirm
- Press directly to return to “1”.

Shows Totals

Totals Menu

5.12.1 Total (truck): Print Ticket

Printing of the total load of the actual truck.

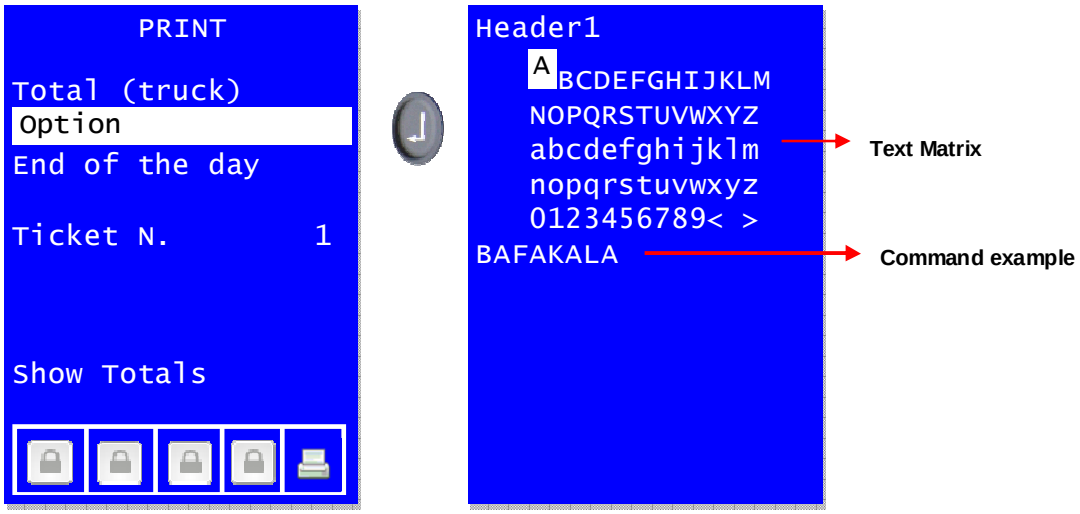


- From the "Print Menu" press F5 to print the ticket.
- The ticket can be also printed immediately from the main operating screen by keeping pressed .

Option

The ticket has to be created based on the needed information and the space on the ticket paper.

Every information has its proper command that has to be entered on the "option" menu.



- To set a name select in the text matrix the desired character using the arrows and press to add it to the text in creation.

  It's possible to use the special character "<" and ">" to move the cursor in the text and change/correct a character.

- Press to confirm value and return to the previous page.

Command string example: **BAFAKALA** (Refer to the following command list)

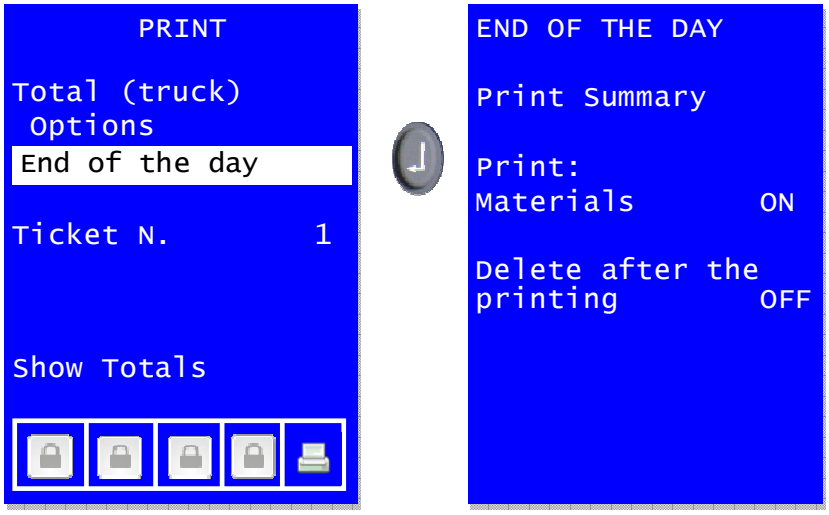
- Will print the following information with text at standard height (“**B”** command):
- Time and Date (“**F”** command)
- (“**A”** command)
- Ticket Number (“**K”** command)
- (“**A”** command)
- Total (truck load) (“**L”** command)
- (“**A”** command)

COMMAND LIST

Command	*Function*
A	Line Feed
B	Normal Character
C	Double Width Character
D	Double Height Character
E	Double Width and Height Character
F	Time and Date
G	Material Code
H	Material Name
I	Operator Code
J	Operator Name
K	Ticket Number
L	Total Load (truck)
M	Customer Code
N O P Q R S T U	Customer Name (each character is a name line – up to 8 lines)
V	Cubic Meters
W	Truck Code
X Y Z a b c d e	Truck Name – number plate (each character is a name line – up to 8 lines)
f	Project Code
g h i j k l m n	Project Name (each character is a name line – up to 8 lines)
o	Buckets Number

5.12.2 End of the day

At the end of a truck load, when the "Delete Total" function is used, the total load shown on the display is added in a dedicated memory that creates the history (summary) of the loaded material called "**totals**" (end of the day summary). Is recorded all the material loaded separated by Materials.Enable/disable the totals to print.



Print Summary

Entering the page "End of the day" is possible to start immediately the print pressing again over "Print Summary" and will be printed the total of every item.

Eventually it's possible to choose what has to be printed (OFF/ON).

Note: this printing can't be customized so be careful about the paper size / quantity of data.

Print :Materials

Enable/disable the totals to print separated by materials (**ON** / **OFF**)

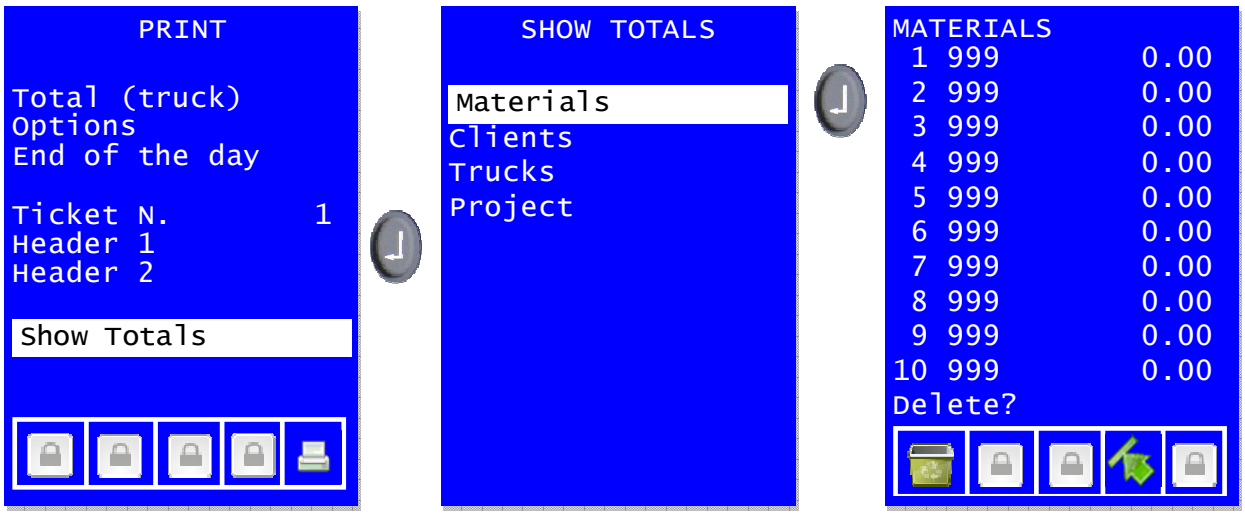
Delete after the printing

- **ON:** The totals database will be automatically deleted at the print end.
- **OFF:** The totals database will stay in memory and incremented (in case of new loads) up to the use of the function "Materials Total" from the DELETE menu.

- Press to enter the setting and use , to set. Confirm with key.
- Press to return to the previous page.

5.12.3 Show Totals

Totals Summary Menu



The complete list of the selected item with is total load is shown.

- Use to scroll pages
- Press to singularly zero the total of each material and confirm with . To zeroing all the totals summary use “Materials Total” in the “Delete” menu.
- Press to return to the first page.
- Press to go back to the operating screen or exit a function

5.13 MULTI-PRODUCT AND MULTI-TRUCK FUNCTION

Last bucket

Total of the actually selected material that has been loaded on the truck

Total load of the truck (includes all the materials loaded)

The **Multi-Product** function enables the possibility to load up to 10 different products on the same truck.

The operator can load on the same truck different materials. See this example:

1) Select as usual the first material to load (GRAVEL) and start to fill the truck
2) After one or more buckets the operator is free to select another material (SAND) and start to load this material.
3) When the quantity of the second material is enough the operator can select a third material to load or return to the first (GRAVEL in this example) continuing from the previous value of load reached.

If you have used the Multi-Product function during the load of a truck you can see in the printer ticket the total truck load as usual and the single load of each material.

The system memorizes these data at the end of the truck load as usual ("delete total") keeping the correct load for every material.

The **Multi-Truck** function is always enabled and is completely transparent by the operator. Changing the truck selected during a load (Total Load > 0) system freezes in memory actual load and it starts again to load from 0. Then you can finish the second truck (usually with print total and delete total) and load again previous truck selecting it's code (previous values are restored on the display!).

NOTE: using Multi-Product and Multi-Truck all the partial values are lost switching off the system during a load!

5.14 MEASURE UNITS

The system is designed to use a machine to load trucks / dumpers.

Using the system for other reasons / work environment it's maybe possible to reach the system computation (max values shown) limits.

Please note that the "." shown into the numbers below it's the decimal separator sign.

6 digits (default)

Value / U.M.	Total load	Partial load	Bucket n°	Target Load	Display Totals max value x each material shown
Kg	999990	999990	1-999	1-999990	999999
metric ton	999.99	999.99	1-999	0.01-999.99	999999
pounds	999990	999990	1-999	1-999990	999999
short ton	999.99	999.99	1-999	0.01-999.99	999.99
long ton	999.99	999.99	1-999	0.01-999.99	999.99

9 digits with parameter "Fixed UM" = ON (refer to the Calibration Manual)

If six digits are few, it's possible to set more digits through a parameter that allows the use of nine digits (this is the limit). Then if the "Fixed UM" is disenabled (OFF) there are limits while if the "Fixed UM" is enabled (ON) there are another limits (refer to the Calibration Manual).

The limits of values with nine digits and "Fixed Unit" ON are the following:

Value / U.M.	Total load	Partial load	Bucket n°	Target Load	Display Totals max value x each material shown
Kg	200000000	200000000	1-999	1-200000000	200000000
Lbs	200000000	200000000	1-999	1-200000000	200000000
metric ton	999.99	999.99	1-999	0.01-999.99	200000000
pounds	999990	999990	1-999	1-999990	200000000
short ton	200000.00	200000.00	1-999	0.01-200000.00	200000.00
long ton	200000.00	200000.00	1-999	0.01-200000.00	200000.00

9 digits with parameter "Fixed UM" = OFF

If six digits are few , it's possible to set more digits through a parameter that allows the use of nine digits (this is the limit). Then if the "Fixed UM" is disenabled (OFF) there are limits while if the "Fixed UM" is enabled (ON) there are another limits (refer to the Calibration Manual).

The limits of values with nine digits and "Fixed Unit" OFF are the following:

Value / U.M.	**Total load**	**Partial load**	**Bucket n°**	**Target Load**	**Display Totals max value x each material shown**
Kg	90700000	90700000	1-999	1-90700000	90700000
Lbs	199956313	199956313	1-999	1-199956313	90700000
metric ton	999.99	999.99	1-999	0.01-999.99	90700000
pounds	999990	999990	1-999	1-999990	90700000
short ton	99977.70	99977.70	1-999	0.01-99977.70	90700.00
long ton	89266.03	89266.03	1-999	0.01-89266.03	89266.03

6

Calibration Mode

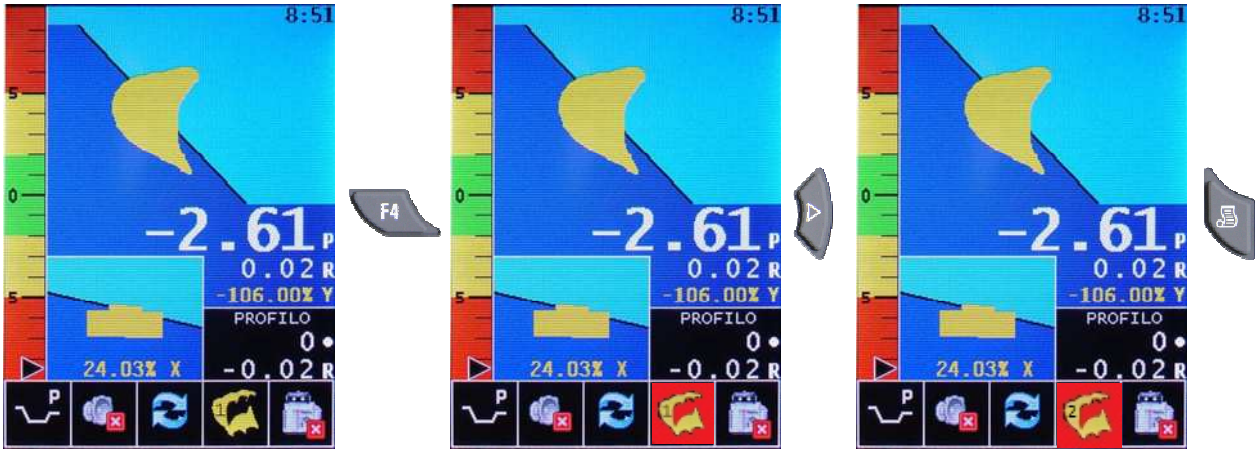
WARNING: this setting affects the system accuracy! Proceed only after the reading of the following instructions!

6.1 BUCKET

Note: Take care to have all the needed tools to calibrate the bucket or call a qualified installer.

Adjust an existing bucket or calibrate a new one.

- From the working page press F4 to enable the bucket selection. The bucket icon flashes.



- Use , to select the bucket to calibrate (change bucket number).
- Press to enter in the bucket calibration menu.

Bucket Calibration Menu

DogBone Setting

Bucket Setting

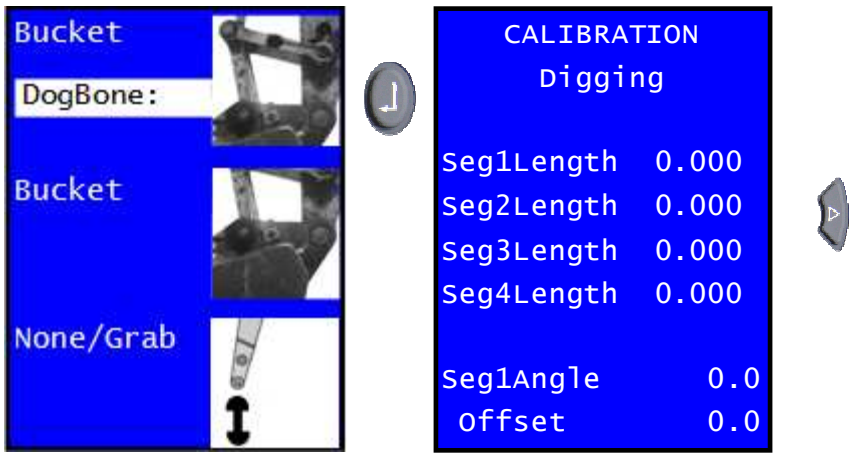
No sensor or Grab Setting

- Use or to select the setting to perform and confirm with key.

6.1.1 Dog Bone

1. Dog Bone Setting

Dog Bone setting must be done before the bucket setting (next page)



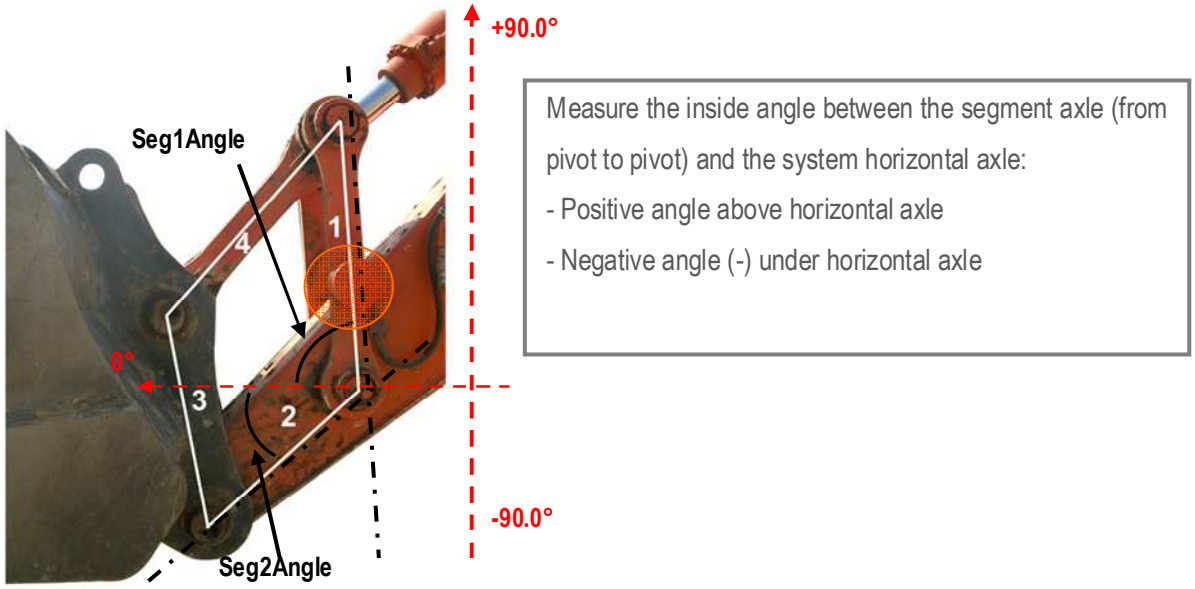
- Press key to scroll next screen.

Seg1Length – Seg2 Length – Seg3 Length – Seg4 Length (1,2,3,4: referring to the picture)

- Measure the four segments (the bones) of the dog bone and set lengths into the proper line.

Seg1Angle – Seg2Angle (referring to the picture)

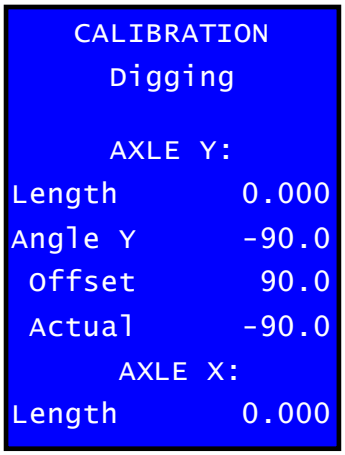
- Measure the segments1&2 angles (the bones) of the dog bone and set values into the proper line.



Offset : Angle correction value (difference from set and read value). Press to adjust.

Note: Changing the DogBone setting means that the bucket setting must be done again.

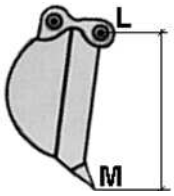
2. *Bucket Setting*



➢ Press to go back to the operating screen.

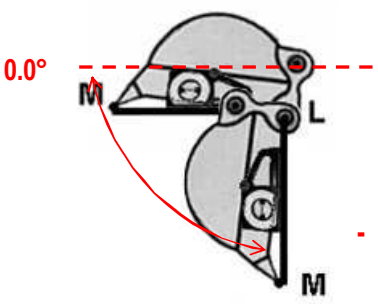
AXLE Y:

Length: Length of the bucket measured straight from pivot (L) to bucket blame (M)



- Measure with accuracy the bucket length and set the value.

Angle Y: Bucket angle (x10) between axle from pivot (L) to bucket blame (M) and the horizontal reference system.



- Measure the angle and set the value

Offset : Angle correction value (difference from set and read value). Press to adjust.

X AXLE:

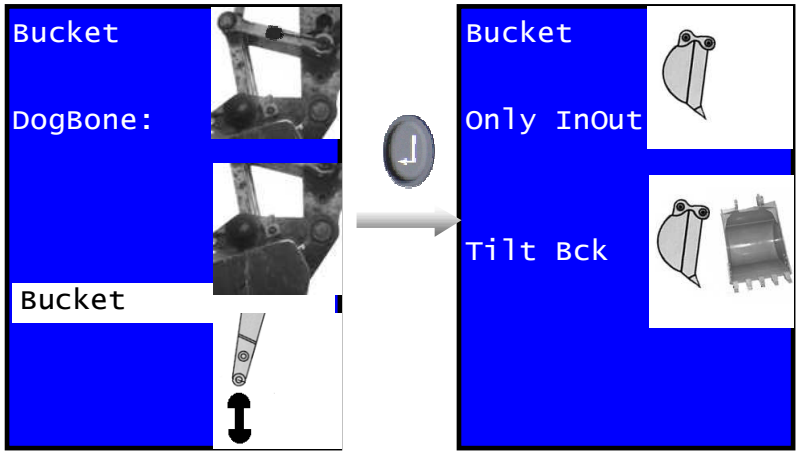
Length: Width of the bucket measured straight from corner to corner (A - B).

- Measure with accuracy the bucket length and set the value.

6.1.2 Bucket

1. Bucket Type Selection

Select the bucket type to calibrate



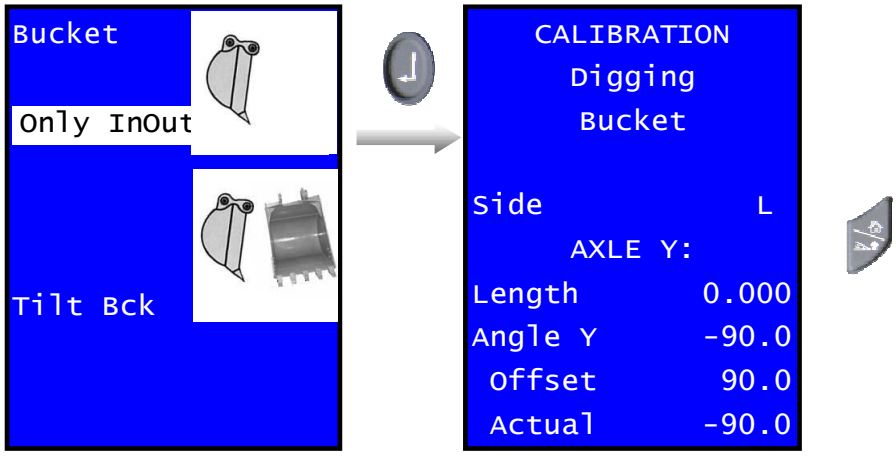
InOut Bucket Setting (1.1)

Tilt Bucket Setting (1.2)

Use or to select the used bucket type and confirm with key.

1.1 InOut Bucket Setting

As for each boom, it's necessary to set length and angle of the bucket.



InOut Bucket Page

➢ Press to go back to the operating screen.

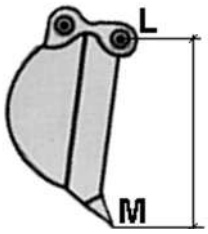
Side: Bucket side where the sensor is installed

- Right (R)
- Left (L)

Y AXLE:

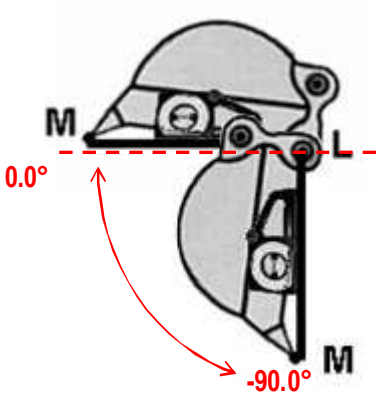
Length: Length of the bucket measured straight from pivot (L) to bucket blame (M)

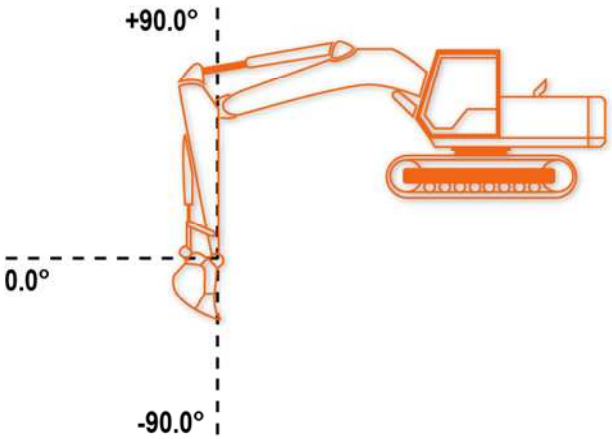
- Measure with accuracy the bucket length and set the value.



Angle Y: Bucket angle (x10) between axle from pivot (L) to bucket blame (M) and the horizontal reference system.

- Measure the angle and set the value





Offset : Angle correction value (difference from set and read value).

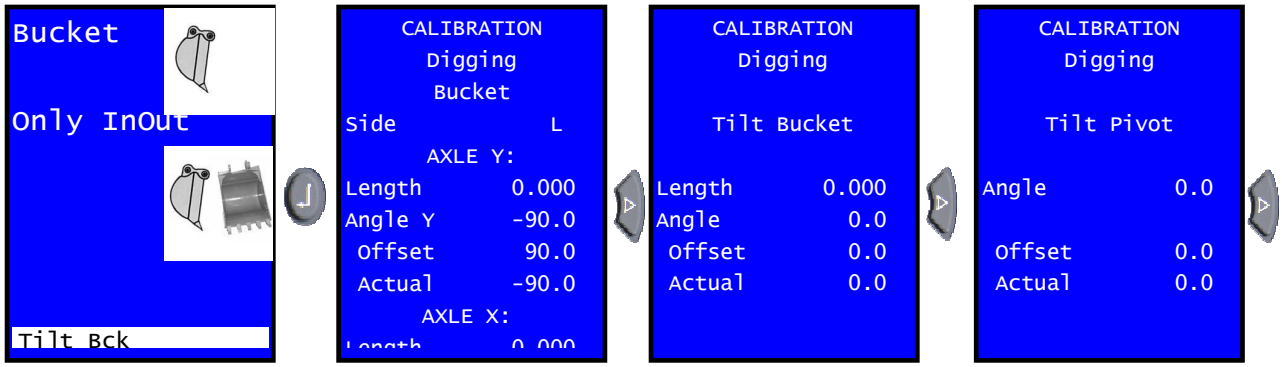
- Press “ENTER” to adjust.

X AXLE:

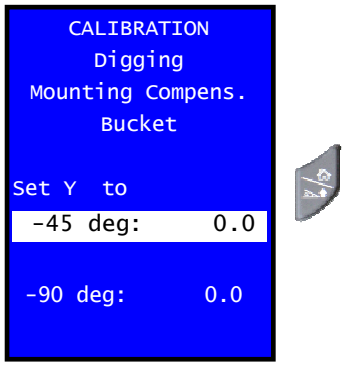
Length: Width of the bucket measured straight from corner to corner (A - B).

- Measure with accuracy the bucket length and set the value.

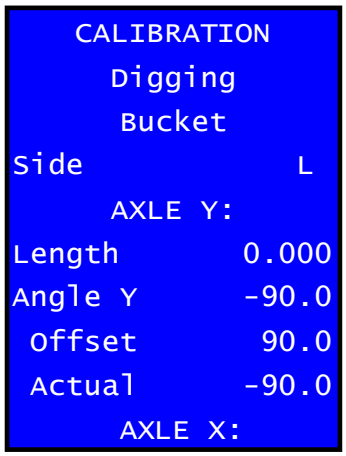
1.2 *Tilt Bucket Setting*



Bucket Setting page | Tilt Setting page | Pivot Setting page



1) Bucket Setting page



Refer to

InOut Bucket Calibration

AXLE X:

- Length value to set

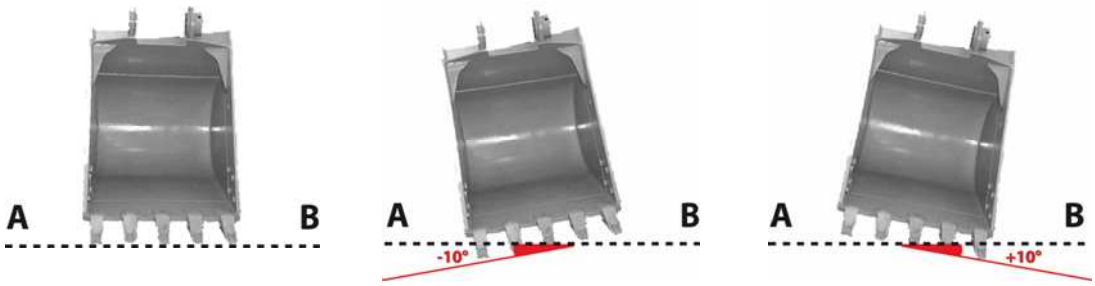
- Angle value to set

AXLE X:

Length: Bucket length (Refer to *InOut Bucket calibration*)

Angle X: Bucket angle (x10) between axle A-B and the horizontal reference system.

- Measure the angle and set the value

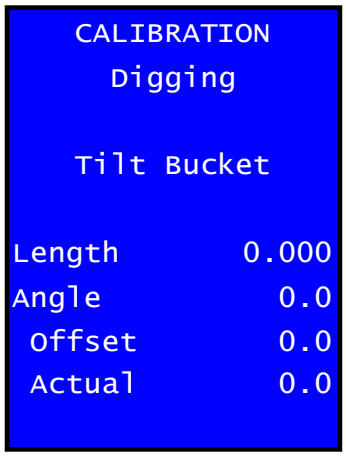


X = 0° for A = B | X < 0° (negative) for A < B | X > 0° (positive) for A > B

Offset : Angle correction value (difference from set and read value).

- Press “ENTER” to adjust.

2) Tilt Setting page



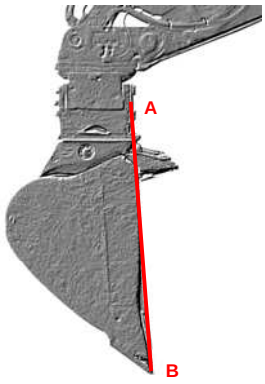
- Length value to set

- Angle value to set

- Angle value adjusted

Length: Length of the bucket measured straight from the pin (A) to the tip of the tooth/blade (B). Pin A is the tilt bucket (transversal inclination) centre of rotation.

- Measure accurately the length of the bucket currently installed and set the value.



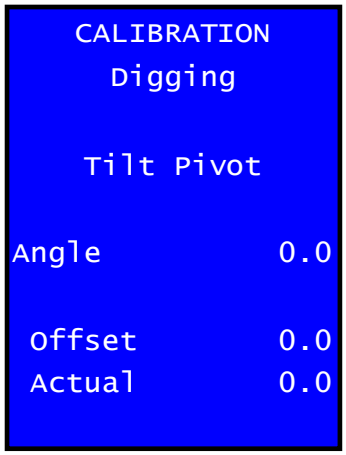
Angle: Angle of the projection A-B as described for *InOut Bucket calibration - Angle Y*

- Measure the angle and set the value

Offset : Angle correction value (difference from set and read value).

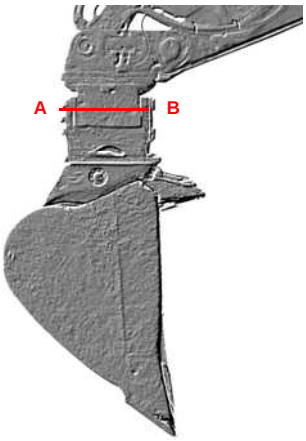
- Press “ENTER” to adjust.

3) Pivot Setting page



Angle: Angle of the bucket lateral inclination pivot.

- Measure the angle and set the value



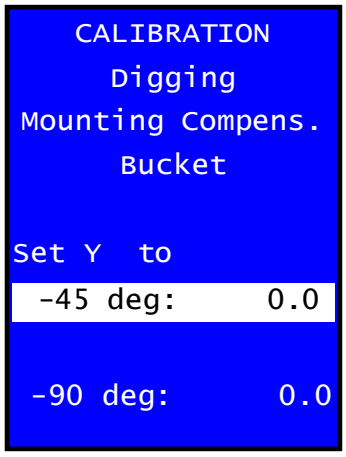
If "A" is higher than "B" then the angle is positive (same convention as booms).

Offset : Angle correction value (difference from set and read value).

- Press "ENTER" to adjust.

4) Mounting Compensation page

This optional calibration is needed to correct the X angle of the bucket if the sensor isn't mounted completely parallel with the Y axis of the machine.



Bucket Y Axle Calibration:

-45°

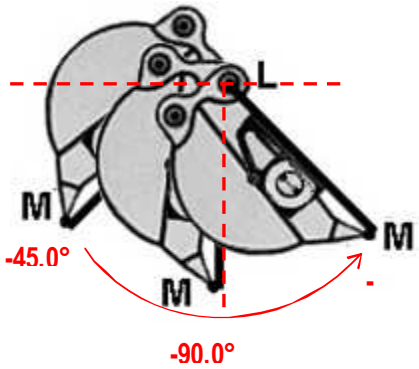
-90°

Bucket Axles actual angles

➢ Press to go back to the operating screen.

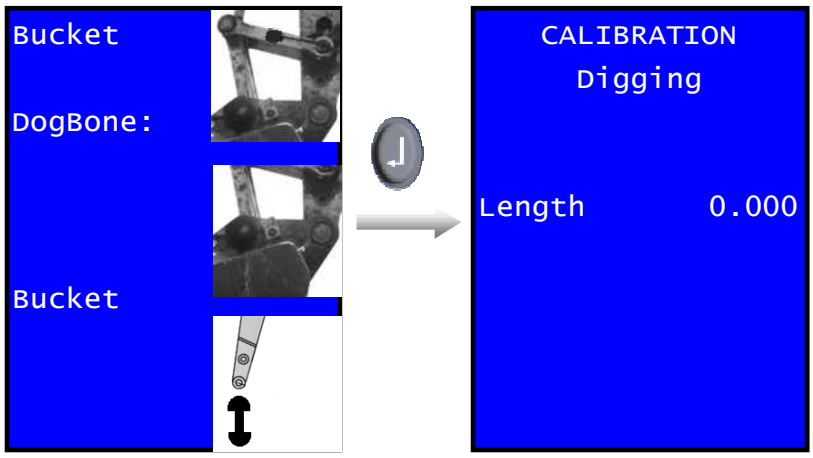
- Put the bucket perfectly horizontal (zero degree X) using laser or a reference instrument and try to have chassis horizontal too.

- Move Y Bucket (longitudinally, in-out). The X angle must be always "0" for every Y angle.
  If not, to compensate the installation move the Y axis to:



- Select the proper calibration and press to perform the compensation.

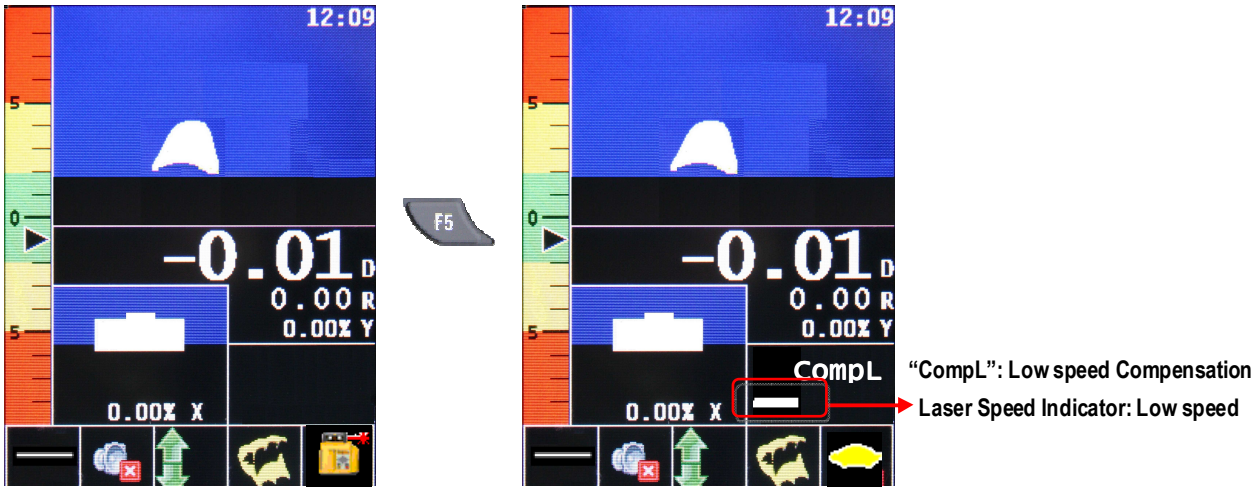
6.1.3 None / Grab Setting



- Use △ or ▽ to set the grab length and confirm with ↵ key.
- Press ⚙ to go back to the operating screen.

6.2 LASER SPEED COMPENSATION

This procedure improves the laser accuracy especially compensating the laser acquisition delays due rising speed.
Before to start the calibration, set the depth distance between the laser beam level and the reference point on the ground.
(example -4.00 if the reference point if 4 meters below the laser).

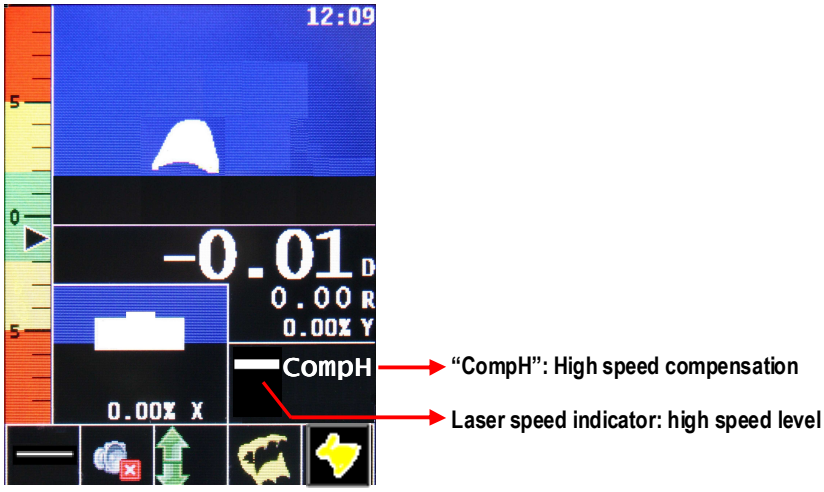


- Press F5 to enter in the laser selection mode
- . Press again to select the desired mode and confirm with .

Low Speed

- Press . The icon will continue to flash and the "CompL" message will appear.
- Cross the laser beam rising the laser receiver at the minimum allowed speed (speed indicator has to be in the lower part of the bar but not completely down attached to the border – too slow and not acquired in this case).
- When the laser is acquired the "OK! " message appears.
- Move down the laser receiver below the laser beam and the "REF.0" message will appear.
- Move the bucket to the reference point and press

High Speed



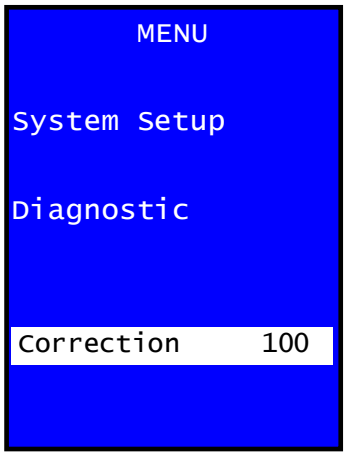
- Press . The icon will continue to flash and the "CompH" message will appear.
- Cross the laser beam rising the laser receiver at the maximum allowed speed (speed indicator has to be in the higher part of the bar but not completely up attached to the border – too fast and not acquired in this case).
- When the laser is acquired appears the "OK! " message.
- Move down the laser receiver below the laser beam and the "REF.0" message will appear.
- Move the bucket to the reference point and press .

6.3 WEIGHING CORRECTION

If the system weighs always heavier or lighter than the real load weighed (compared to a certified weigh bridge for example) it's possible to tune the accuracy using the correction function and adjust it with a % variation.

The correction must be the same as the found error.

Press&hold



- From the main operating screen (*Digging or Weighing)* keep pressed key.
  Will be displayed the *Setup &Diagnostic* menu.

System Setup

Refer to the Installation and Calibration Manual

Correction Speed Compensation Setting

This % correction value is directly applied to the measured load.

In the speed compensation is limited from 70% to 130%

If a limit is reached, usually something in the calibration is not good like reference speed different from calibration or too slow.

- Press to enter the setting and use , to set. Confirm with key.
- Press to return to the previous page.

Example :

If the system weights 5% less than the real weight, the value of correction must be increased of 5 percentage points.

If the system weights 5% more than the real weight the value of correction must be decreased of 5 percentage points.

7

Alarms

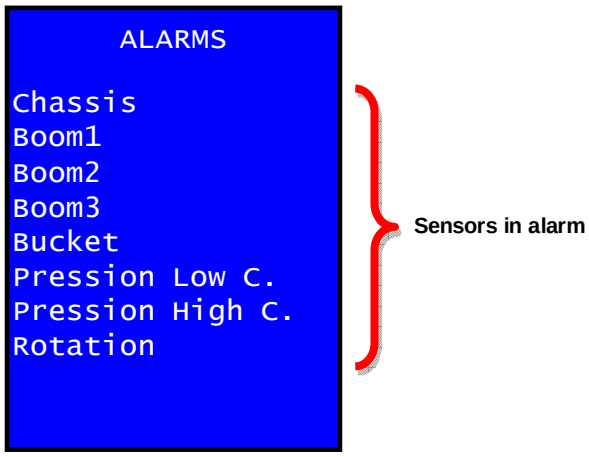
During the normal work, if the control box doesn't receive a sensor, the alarm page will appear.

Please note that if the problem is a broken cable, all the sensor after the failure in the line will be in alarm.

It's also possible that if there's a short circuit in the line all the angular sensor will be in alarm.

The user can verify the status of the cables/connectors and restart the control box to see if the problem persist.

In this situation the system can't be used and it's only possible to enter in the system menu / diagnostic and eventually in the calibration section with the proper password.



Alarms Table			
Alarms			**Active on**
1	Chassis	Chassis not found	Digging (S1), Digging & Weighing (S3)
2	Boom 1	Boom 1 not found	Digging (S1), Weighing (S2), Digging & Weighing (S3)
3	Boom 2	Boom 2 not found	Digging (S1), Weighing (S2), Digging & Weighing (S3)
4	Boom 3	Boom 3 not found	Digging (S1), Weighing (S2), Digging & Weighing (S3)
5	Bucket	Bucket not found	Digging (S1), Digging & Weighing (S3)
6	Pressure Low C.	Pressure Transducer not found	Weighing (S2), Digging & Weighing (S3)
7	Pressure High C.	Pressure Transducer not found	Weighing (S2), Digging & Weighing (S3)
8	Rotation	Rotation too fast for five seconds	Digging (S1), Weighing (S2), Digging & Weighing (S3)

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